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Service Manual

ORDER NO.
CRT3709

MULTI-CD CONTROL DSP HIGH POWER CD/MP3/WMA/AAC PLAYER WITH BLUETOOTH WIRELESS TECHNOLOGY AND FM/AM TUNER

DEH-P9880BT /X1F/BR

This service manual should be used together with the following manual(s) listed below. For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
DEH-P980BT/XN/UC	CRT3687		
CX-3164	CRT3583	S10.5COMP1	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZD. JUNE 2006 Printed in Japan

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 8)

PACKING SECTION PARTS LIST

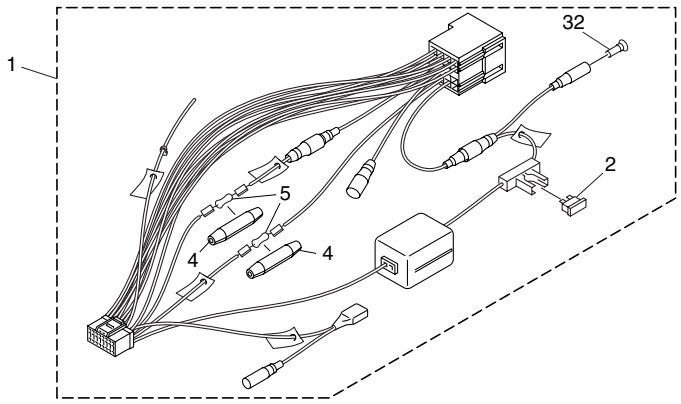
*:Non spare part

Mark	No.	Description	DEH-P9850BT/XN/ES	DEH-P9880BT/X1F/BR
	1-3	Owner's Manual	CRB2179	CRB2181(Portuguese(B))
	1-4	Installation Manual	CRB2180	CRB2182(Portuguese(B))
	1-6	Caution Card	CRP1310	Not used
*	1-8	Caution Card	Not used	CRN1084
*	1-9	Warranty Card	Not used	CRY1226
*	1-10	Service Network	Not used	CRY1227
	3	Cord Assy	CDE7701	CDE6562
	18	Carton	CHG5747	CHG5749
	19	Contain Box	CHL5747	CHL5749

EXTERIOR(1)(Page 10)

EXTERIOR(1) SECTION PARTS LIST

Mark	No.	Description	DEH-P9850BT/XN/ES	DEH-P9880BT/X1F/BR
	1	Cord Assy	CDE7701	CDE6562
	8	Detach Grille Assy	CXC5595	CXC5597
	22	Grille Unit	CXC5603	CXC6183
	32	Terminal Cover	Not used	CKX-003



EXTERIOR(2)(Page 12)

EXTERIOR(2) SECTION PARTS LIST

Mark	No.	Description	DEH-P9850BT/XN/ES	DEH-P9880BT/X1F/BR
	14	Tuner Amp Unit	CWN1438	CWN1440

ELECTRICAL PARTS LIST(Page 54)

TUNER AMP UNIT

Circuit Symbol and No.	Part Name	DEH-P9850BT/XN/ES	DEH-P9880BT/X1F/BR
C560		CKSRYB102K50	Not used

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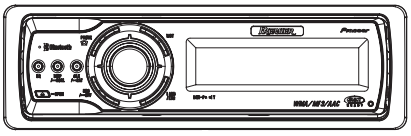
Service Manual



DEH-P980BT/XN/UC

ORDER NO.
CRT3687

MULTI-CD CONTROL DSP HIGH POWER CD/MP3/WMA/AAC PLAYER WITH BLUETOOTH WIRELESS TECHNOLOGY AND FM/AM TUNER

DEH-P980BT /XN/UC
DEH-P9800BT /XN/UC
DEH-P9850BT /XN/ES

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3164	CRT3583	S10.5COMP1	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

For details, refer to "Important Check Points for Good Servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZD.MAY 2006 Printed in Japan

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

● **Safety Precautions for those who Service this Unit.**

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13 cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

● **Service Precaution**

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SPECIFICATIONS

● DEH-P980BT/XN/UC

General

Power source ..... 14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 6.5 mA or less
Dimensions (W × H × D):
DIN
Chassis ..... 178 × 50 × 161 mm (7 × 2 × 6-3/8 in.)
Nose ..... 188 × 58 × 23 mm (7-3/8 × 2-1/4 × 7/8 in.)
D
Chassis ..... 178 × 50 × 166 mm (7 × 2 × 6-1/2 in.)
Nose ..... 170 × 45 × 18 mm (6-3/4 × 1-3/4 × 3/4 in.)
Weight ..... 1.7 kg (3.7 lbs)

Audio/DSP

Maximum power output ..... 50 W × 4
Continuous power output ... 22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance ..... 4 Ω (4 Ω to 8 Ω allowable)
Preout max output level/output impedance 5 V/100Ω
Loudness contour ..... +10 dB (100 Hz), +6.5 dB (10 kHz) (volume: –30 dB)
Equalizer (16-Band Graphic Equalizer):
Frequency ..... 20/31.5/50/80/125/200/315/500/800/1.25k/2k/3.15k/5k/8k/12.5k/20k Hz
Equalization range ..... ±12 dB
Auto equalizer:
(Front & rear & subwoofer 16 band graphic)
Frequency ..... 20/31.5/50/80/125/200/315/500/800/1.25k/2k/3.15k/5k/8k/12.5k/20k Hz
Equalization range ..... +6 dB to –12 dB
HPF (Front/rear):
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... 0 (Pass)/–6/–12 dB/oct
Gain ..... 0 dB to –24 dB/Mute
Subwoofer (stereo/mono):
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... –6/–12/–18 dB/oct
Gain ..... +6 dB to –24 dB/Mute
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
Sampling frequency ..... 44.1 kHz
Number of quantization bits ..... 16; linear
Frequency characteristics ... 5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio ..... 100 dB (1 kHz) (IHF-A network)
Dynamic range ..... 95 dB (1 kHz)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format ..... MPEG-4 AAC (iTunes® encoded only)
WAV signal format ..... Linear PCM & MS ADPCM

FM tuner

Frequency range ..... 87.9 MHz to 107.9 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IHF-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 Hz to 15 000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)
Three-signal intermodulation (desired signal level) ..... 30 dBf (two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 kHz to 1 710 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IHF-A network)

Bluetooth

Version ..... Bluetooth 1.2 certified
Output power ..... +4 dBm Max. (Power class 2)
Profile ..... GAP (Generic Access Profile)
SDP (Service Discovery Protocol)
HSP (Head Set Profile)
HFP (Hands Free Profile)
A2DP (Advanced Audio Distribution Profile)
AVRCP (Audio Video Remote Control Profile)
OPP (Object Push Profile)

Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

● DEH-P9800BT/XN/UC

General

Power source ..... 14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 6.5 mA or less
Dimensions (W × H × D):
- DIN
  - Chassis ..... 178 × 50 × 161 mm (7 × 2 × 6-3/8 in.)
  - Nose ..... 188 × 58 × 23 mm (7-3/8 × 2-1/4 × 7/8 in.)
- D
  - Chassis ..... 178 × 50 × 166 mm (7 × 2 × 6-1/2 in.)
  - Nose ..... 170 × 45 × 18 mm (6-3/4 × 1-3/4 × 3/4 in.)

Weight ..... 1.7 kg (3.7 lbs)

Audio/DSP

Maximum power output ..... 50 W × 4
Continuous power output ..... 22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance ..... 4 Ω (4 Ω to 8 Ω allowable)
Preout max output level/output impedance 5 V/100Ω
Loudness contour ..... +10 dB (100 Hz), +6.5 dB (10 kHz) (volume: –30 dB)
Equalizer (16-Band Graphic Equalizer):
- Frequency ..... 20/31.5/50/80/125/200/315/500/800/1.25k/2k/3.15k/5k/8k/12.5k/20k Hz
- Equalization range ..... ±12 dB

HPF (Front/rear):
- Frequency ..... 50/63/80/100/125/160/200 Hz
- Slope ..... 0 (Pass)/–6/–12 dB/oct
- Gain ..... 0 dB to –24 dB/Mute

Subwoofer (stereo/mono):
- Frequency ..... 50/63/80/100/125/160/200 Hz
- Slope ..... –6/–12/–18 dB/oct
- Gain ..... +6 dB to –24 dB/Mute
- Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
- Sampling frequency ..... 44.1 kHz
- Number of quantization bits ..... 16; linear

Frequency characteristics ..... 5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio ..... 100 dB (1 kHz) (IHF-A network)
Dynamic range ..... 95 dB (1 kHz)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format ..... MPEG-4 AAC (iTunes® encoded only)
WAV signal format ..... Linear PCM & MS ADPCM

FM tuner

Frequency range ..... 87.9 MHz to 107.9 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IHF-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 Hz to 15 000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)
Three-signal intermodulation (desired signal level) ..... 30 dBf (two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 kHz to 1 710 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IHF-A network)

Bluetooth

Version ..... Bluetooth 1.2 certified
Output power ..... +4 dBm Max. (Power class 2)
Profile ..... GAP (Generic Access Profile) SDP (Service Discovery Protocol) HSP (Head Set Profile) HFP (Hands Free Profile) A2DP (Advanced Audio Distribution Profile) AVRCP (Audio Video Remote Control Profile) OPP (Object Push Profile)

Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

● DEH-P9850BT/XN/ES

General

Rated power source ..... 14.4 V DC (allowable voltage range: 12.0 V to 14.4 V DC)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 6.5 mA or less
Dimensions (W × H × D):
DIN
Chassis ..... 178 × 50 × 161 mm
Nose ..... 188 × 58 × 23 mm
D
Chassis ..... 178 × 50 × 166 mm
Nose ..... 170 × 45 × 18 mm
Weight ..... 1.7 kg

Audio/DSP

Maximum power output ..... 50 W × 4
Continuous power output ... 22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance ..... 4 Ω (4 Ω to 8 Ω allowable)
Preout max output level/output impedance 5 V/100Ω
Loudness contour ..... +10 dB (100 Hz), +6.5 dB (10 kHz) (volume: –30 dB)
Equalizer (16-Band Graphic Equalizer):
Frequency ..... 20/31.5/50/80/125/200/315/500/800/1.25k/2k/3.15k/5k/8k/12.5k/20k Hz
Equalization range ..... ±12 dB
Auto equalizer:
(Front & rear & subwoofer 16 band graphic)
Frequency ..... 20/31.5/50/80/125/200/315/500/800/1.25k/2k/3.15k/5k/8k/12.5k/20k Hz
Equalization range ..... +6 dB to –12 dB
HPF (Front/rear):
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... 0 (Pass)/–6/–12 dB/oct
Gain ..... 0 dB to –24 dB/Mute
Subwoofer (stereo/mono):
Frequency ..... 50/63/80/100/125/160/200 Hz
Slope ..... –6/–12/–18 dB/oct
Gain ..... +6 dB to –24 dB/Mute
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
Sampling frequency ..... 44.1 kHz
Number of quantization bits ..... 16; linear
Frequency characteristics ... 5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio ..... 100 dB (1 kHz) (IEC-A network)
Dynamic range ..... 95 dB (1 kHz)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format ..... MPEG-4 AAC (iTunes® encoded only)
WAV signal format ..... Linear PCM & MS ADPCM

FM tuner

Frequency range ..... 87.5 MHz to 108.0 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 Hz to 15 000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

Bluetooth

Version ..... Bluetooth 1.2 certified
Output power ..... +4 dBm Max. (Power class 2)
Profile ..... GAP (Generic Access Profile)
SDP (Service Discovery Protocol)
HSP (Head Set Profile)
HFP (Hands Free Profile)
A2DP (Advanced Audio Distribution Profile)
AVRCP (Audio Video Remote Control Profile)
OPP (Object Push Profile)

Infrared remote control

Wavelength ..... 940 nm ±50 nm
Output ..... typ; 12 mw/sr per Infrared LED

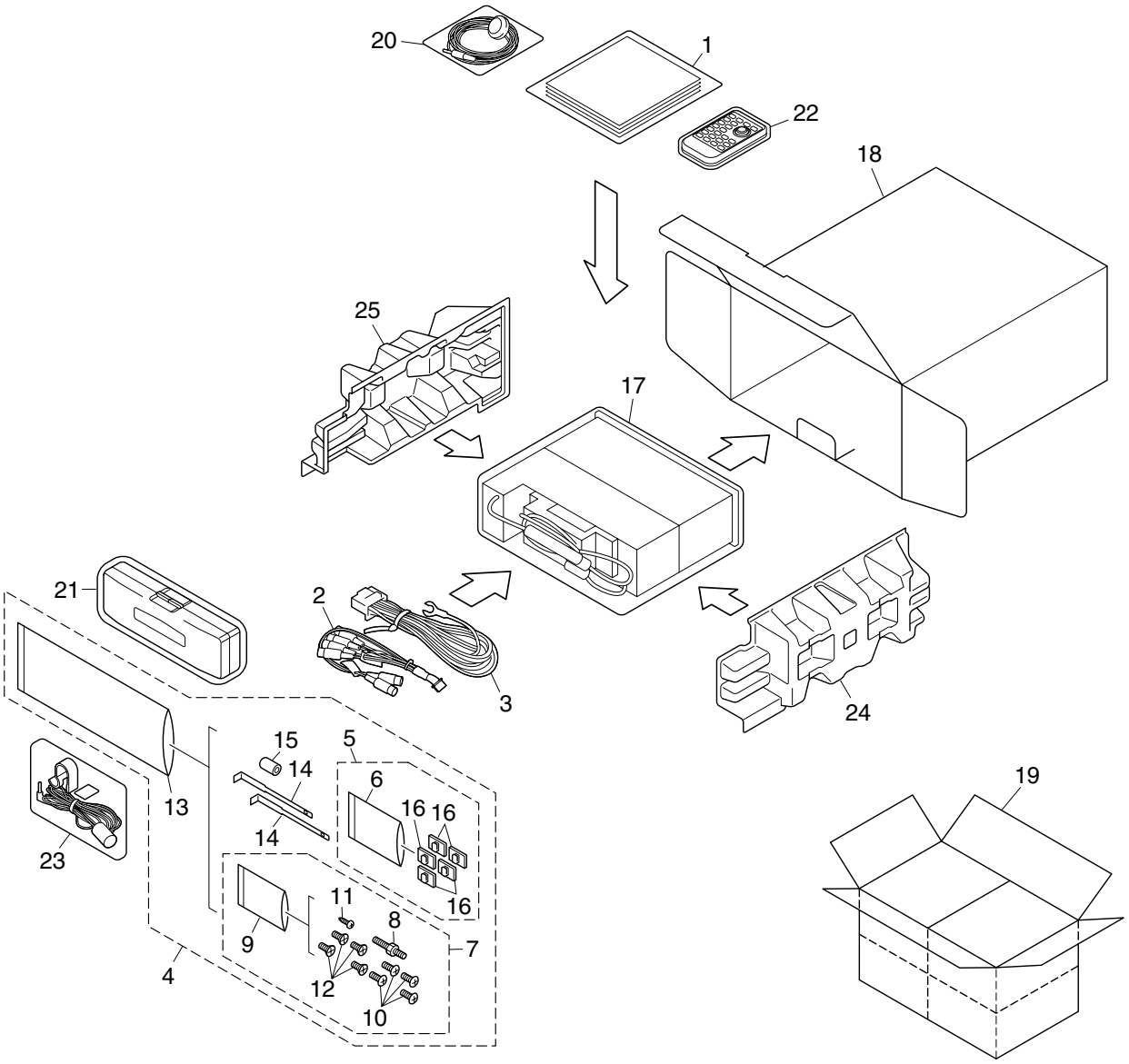
Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

2. EXPLODED VIEWS AND PARTS LIST

*NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
• Screw adjacent to▽mark on the product are used for disassembly.
• For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)

2.1 PACKING



(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
*	1-1	Card	See Contrast table(2)
	1-2	Polyethylene Bag	CEG1116
	1-3	Owner's Manual	See Contrast table(2)
	1-4	Installation Manual	See Contrast table(2)
	1-5	Waranty Card	See Contrast table(2)
	1-6	Caution Card	CRP1310
*	1-7	Caution Card	XRP7002
	2	Cord Assy	CDE8284
	3	Cord Assy	CDE7701
	4	Accessory Assy	See Contrast table(2)
	5	Cord Clamper Assy	CEA4636
*	6	Polyethylene Bag	E36-615
	7	Screw Assy	See Contrast table(2)
	8	Screw	CBA1650
*	9	Polyethylene Bag	CEG-127
	10	Screw	CRZ50P090FTC
	11	Screw	See Contrast table(2)
	12	Screw	TRZ50P080FTC
*	13	Polyethylene Bag	CEG-158
	14	Handle	CNC5395
	15	Bush	CNV3930
*	16	Clamper	CNN8262
	17	Polyethylene Bag	See Contrast table(2)
	18	Carton	See Contrast table(2)
	19	Contain Box	See Contrast table(2)
	20	Microphone Assy	See Contrast table(2)
	21	Case Assy	XXA7417
	22	Remote Control Unit	CXC5715
	23	Microphone Assy	CPM1059
	24	Protector	XHP7008
	25	Protector	XHP7007

(2) CONTRAST TABLE

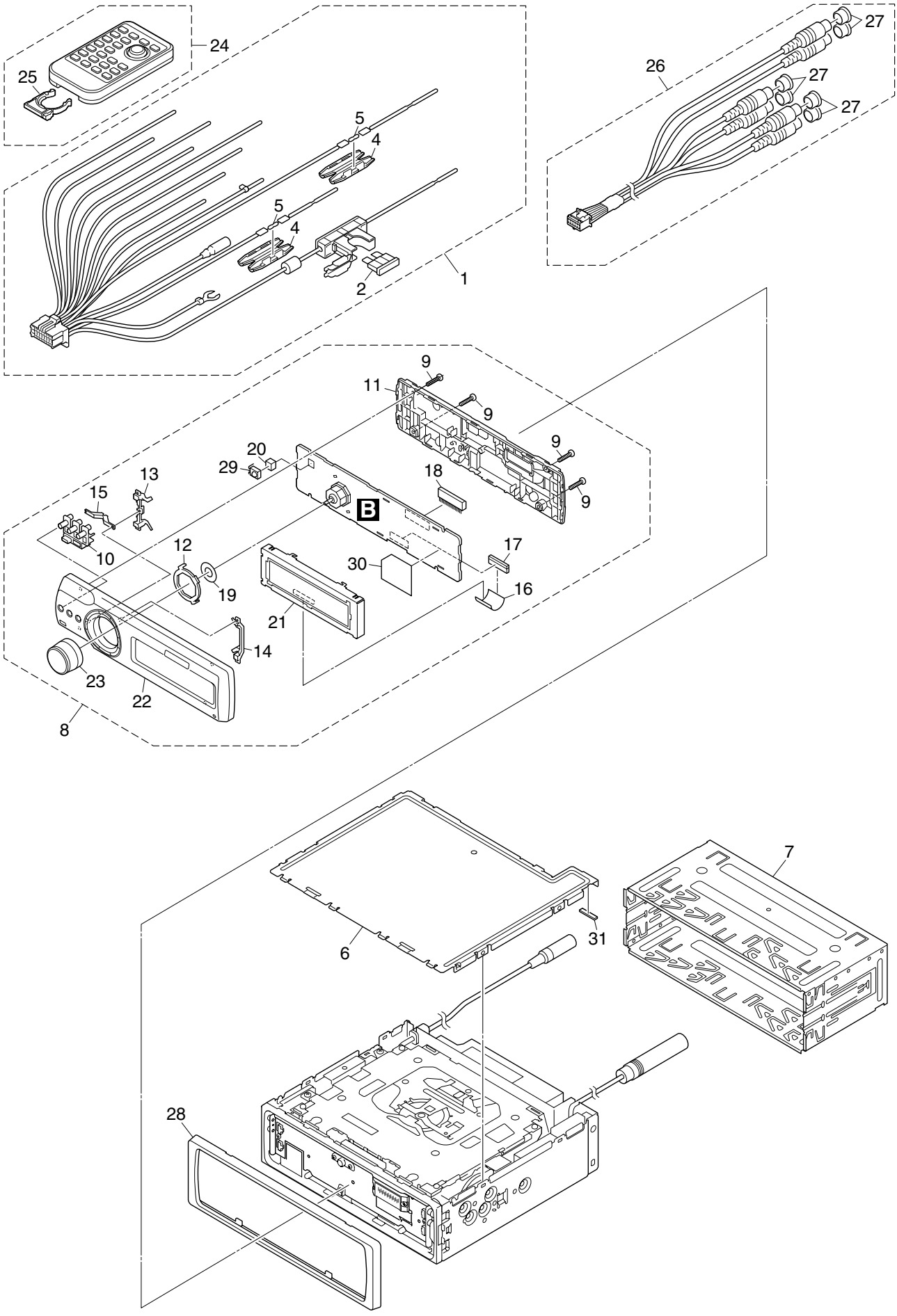
DEH-P980BT/XN/UC, DEH-P9800BT/XN/UC and DEH-P9850BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P980BT/XN/UC	DEH-P9800BT/XN/UC	DEH-P9850BT/XN/ES
*	1-1	Not used	Not used	ARY1048	Not used
	1-3	Owner's Manual	CRD4096	CRD4098	CRB2179
	1-4	Installation Manual	CRD4097	CRD4099	CRB2180
	1-5	Waranty Card	CRY1070	CRY1246	Not used
	4	Accessory Assy	CEA5919	CEA5919	* CEA5920
	7	Screw Assy	CEA5322	CEA5322	CEA3849
	11	Screw	JPZ20P060FTB	JPZ20P060FTB	Not used
	17	Polyethylene Bag	CEG1173	CEG1173	CEG-162
	18	Carton	CHG5751	CHG5750	CHG5747
	19	Contain Box	CHL5751	CHL5750	CHL5747
	20	Microphone Assy	CPM1054	Not used	CPM1054

Owner's Manual,Installation Manual

Part No.	Language
CRD4096	English, French
CRD4097	English, French
CRD4098	English, French
CRD4099	English, French
CRB2179	English
CRB2180	English

2.2 EXTERIOR(1)



(1) EXTERIOR(1) SECTION PARTS LIST

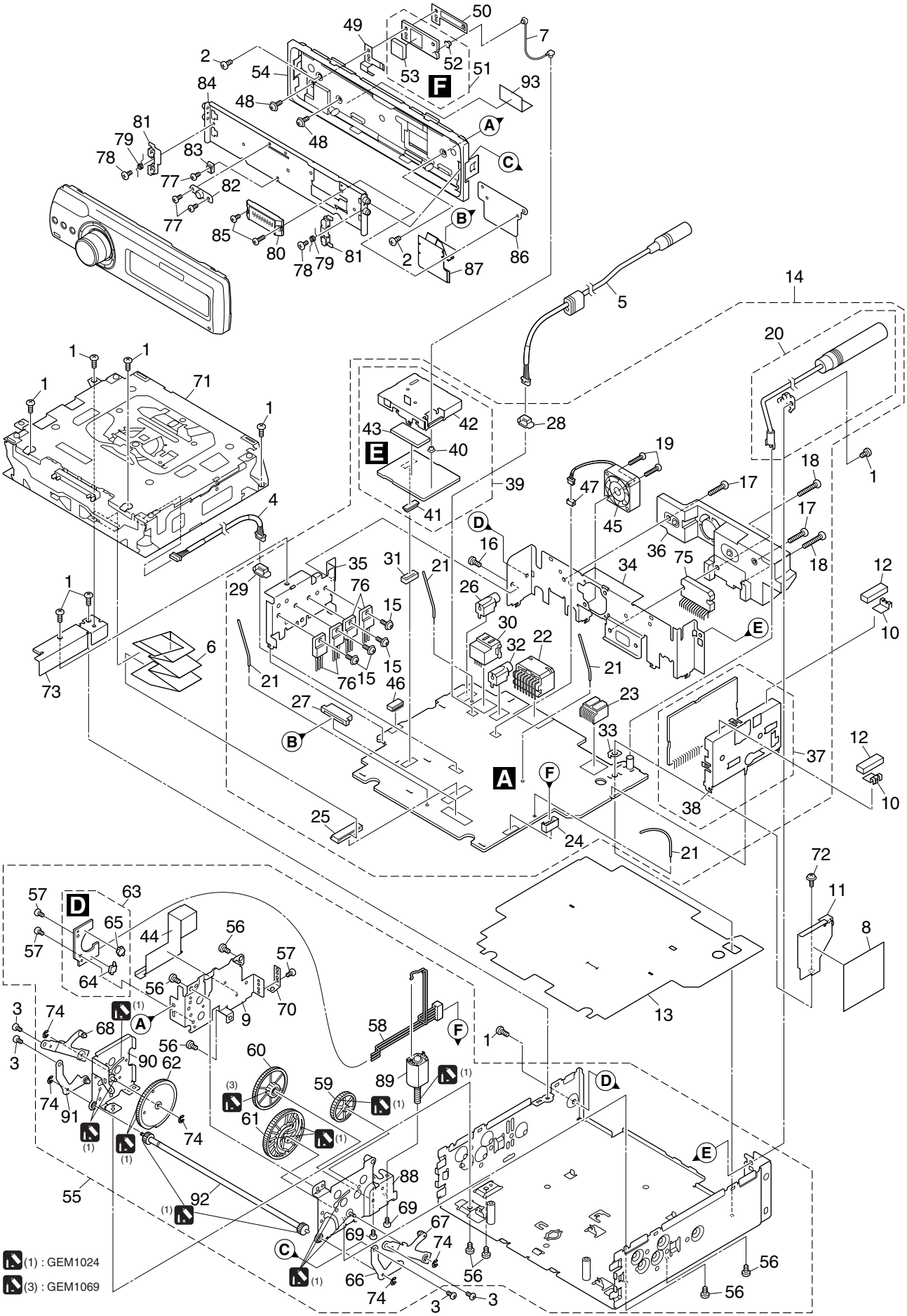
Mark	No.	Description	Part No.
	1	Cord Assy	CDE7701
⚠	2	Fuse(10 A)	CEK1136
	3	•••••	
	4	Cap	CNS1472
	5	Resistor	RS1/2PMF102J
	6	Case Assy	CXC6907
	7	Holder	CNC8659
	8	Detach Grille Assy	See Contrast table(2)
	9	Screw	BPZ20P080FTB
	10	Button (EQ, DISP, CLOCK)	CAC9527
	11	Cover	CNS8491
	12	Holder	CNV8834
	13	Lighting Conductor	CNV9010
	14	Lighting Conductor	CNV9011
	15	Lighting Conductor	CNV9013
	16	Cable	CDE8057
	17	Connector(CN1931)	CKS5090
	18	Connector(CN1701)	CKS5662
	19	Sheet	CNM8658
	20	Cushion	CNM9946
	21	OEL Module	MXK8230
	22	Grille Unit	See Contrast table(2)
	23	Knob Unit(MULTI-CONTROL)	CXC5674
	24	Remote Control Unit	CXC5715
	25	Cover	CZN5357
	26	Cord Assy	CDE8284
	27	Cap	CNV6727
	28	Panel	XNS7145
	29	IC (IC1801)	GP1UX51RK
	30	Insulator	CNN1327
	31	Cushion	CNN1405

(2) CONTRAST TABLE

DEH-P980BT/XN/UC, DEH-P9800BT/XN/UC and DEH-P9850BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P980BT/XN/UC	DEH-P9800BT/XN/UC	DEH-P9850BT/XN/ES
	8	Detach Grille Assy	CXC5593	CXC5594	CXC5595
	22	Grille Unit	CXC5601	CXC5602	CXC5603

2.3 EXTERIOR(2)



(1) EXTERIOR(2) SECTION PARTS LIST

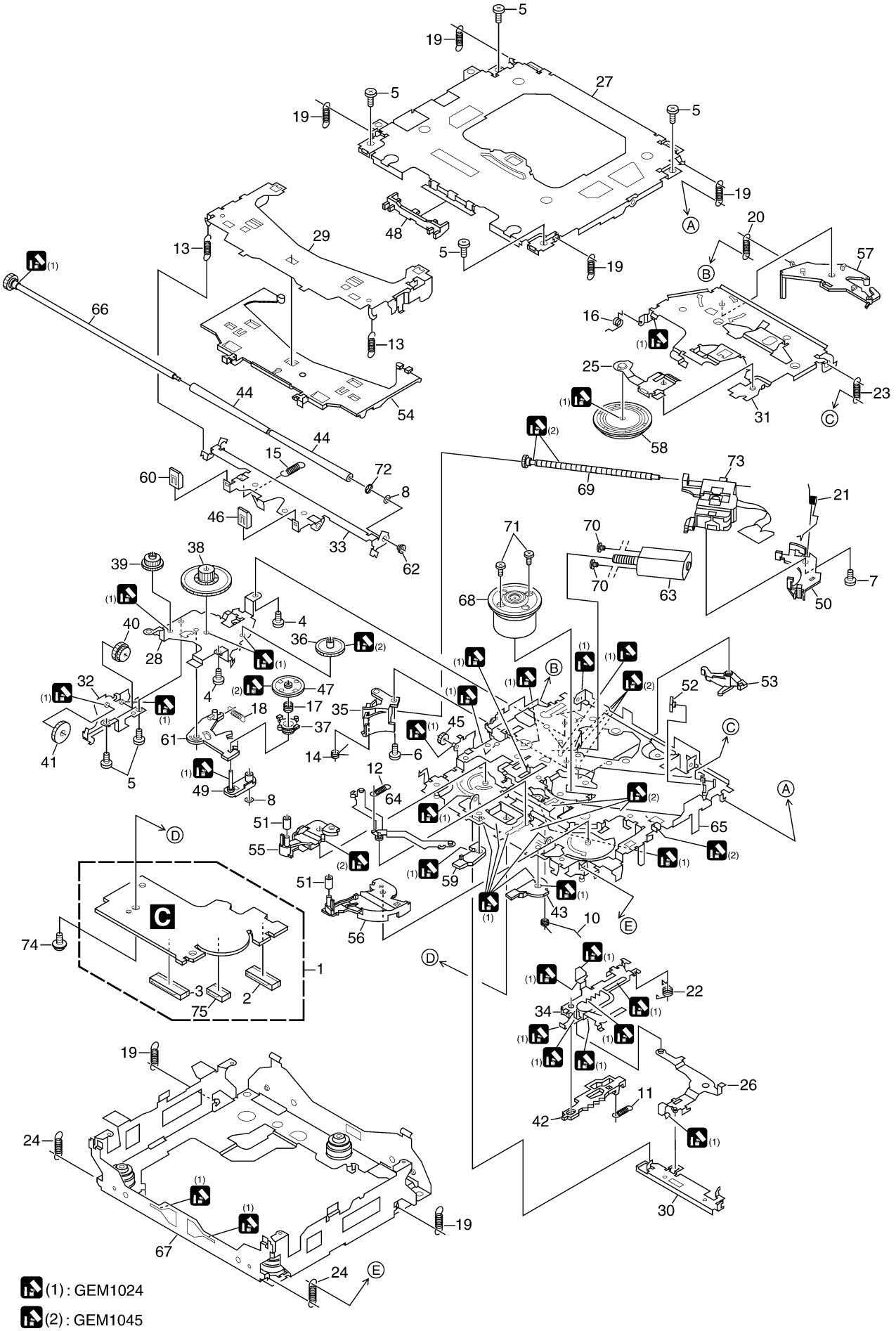
Mark	No.	Description	Part No.
	1	Screw	BSZ26P060FTC
	2	Screw(M2.6 x 4)	CBA1828
	3	Screw(M2 x 2.5)	CBA1924
	4	Cord Assy	CDE8315
	5	Cord Assy	See Contrast table(2)
	6	Cable	CDE8067
	7	Cord Assy	CDE8125
	8	Insulator	CNN1406
	9	Holder	XNX7017
	10	Earth Plate	CND2171
	11	Shield	CND3599
	12	Cushion	CNM9126
	13	Insulator	CNN1413
	14	Tuner Amp Unit	See Contrast table(2)
	15	Screw	ASZ26P060FTC
	16	Screw	BMZ26P040FTC
	17	Screw	BMZ26P120FTC
	18	Screw	BMZ26P180FTC
	19	Screw(M2.6 x 14)	CBA1632
	20	Antenna Cable	CDH1336
	21	Clamper	CEF1050
	22	Plug(CN991)	CKM1278
	23	Connector(CN321)	CKM1389
	24	Plug(CN801)	CKS-786
	25	Connector(CN701)	CKS3834
	26	Connector(CN671)	See Contrast table(2)
	27	Connector(CN811)	CKS4811
	28	Connector(CN431)	CKS4823
	29	Connector(CN702)	CKS4824
	30	Connector(CN101)	CKS5271
	31	Connector(CN551)	CKS5321
	32	Connector(CN441)	CKS5523
	33	Holder(CN402)	CNC5399
	34	Holder	See Contrast table(2)
	35	Holder	CND3133
	36	Heat Sink	CNR1869
	37	FM/AM Tuner Unit	CWE1952
	38	Holder	CND1054
	39	Bluetooth Unit	CWN1771
	40	Connector(CN1)	CKS5058
	41	Connector(CN76)	CKS5320
	42	Shield	CND3134
	43	Sheet	CNM9598
	44	Insulator	XNM7119
	45	Fan Motor(M972)	CXM1288
	46	7P FFC Connector (CN561)	VKN1299
	47	ZH Connector 2P (CN971)	VKN1928
	48	Screw(M2 x 3.5)	CBA2030
	49	Earth Plate	CND3138
	50	Holder	CND3139
	51	Antenna Unit	CWN1772
	52	Connector(ANT1102)	CKS5058
	53	BT Antenna (ANT1101)	CWX3132
	54	Panel Unit	CXC6608
	55	Drive Unit	CXC6618
	56	Screw	BMZ26P040FTC
	57	Screw(M2 x 2)	CBA1871
	58	Cord	CDE7392
	59	Gear	CNV7752
	60	Gear	CNV7753
	61	Gear	CNV7754
	62	Gear	CNV7755
	63	Switch Unit	CWS1389
	64	Switch(S1)	CSN1051
	65	Switch(S2)	CSN1052
	66	Arm Unit	CXC2199
	67	Arm Unit	CXC6623
	68	Arm Unit	CXC6624
	69	Screw	JFZ20P020FTC
	70	Spring	XBL7003
	71	CD Mechanism Module (S10.5)	CXK5754
	72	Screw	ISS26P055FTC
	73	Holder	CND3606
	74	Washer	YE15FTC
	75	IC (IC351)	PAL007B
	76	Transistor (Q721,901,911,921)	2SD2396
	77	Screw(M2 x 2)	CBA1871
	78	Screw(M2 x 2)	CBA1935
	79	Spring	CBH2530
	80	Connector	CKS5273
	81	Arm	CNV6962
	82	Guide	CNV6967
	83	Guide	CNV8048
	84	Case Unit	CXC5695
	85	Screw(M2 x 3.5)	XBA7002
	86	Holder	XNC7019
	87	Flexible PCB	XNP7026
	88	Holder Unit	XXA7399
	89	Motor Unit(M801)	XXA7400
	90	Holder Unit	XXA7401
	91	Arm Unit	XXA7403
	92	Gear Unit	XXA7424
	93	Insulator	CNN1499

(2) CONTRAST TABLE

DEH-P980BT/XN/UC, DEH-P9800BT/XN/UC and DEH-P9850BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P980BT/XN/UC	DEH-P9800BT/XN/UC	DEH-P9850BT/XN/ES
	5	Cord Assy	CDE8062	CDE8144	CDE8062
	14	Tuner Amp Unit	CWN1436	CWN1437	CWN1438
	26	Connector(CN671)	CKS4124	CKS4124	Not used
	34	Holder	CND3132	CND3132	CND3161

2.4 CD MECHANISM MODULE

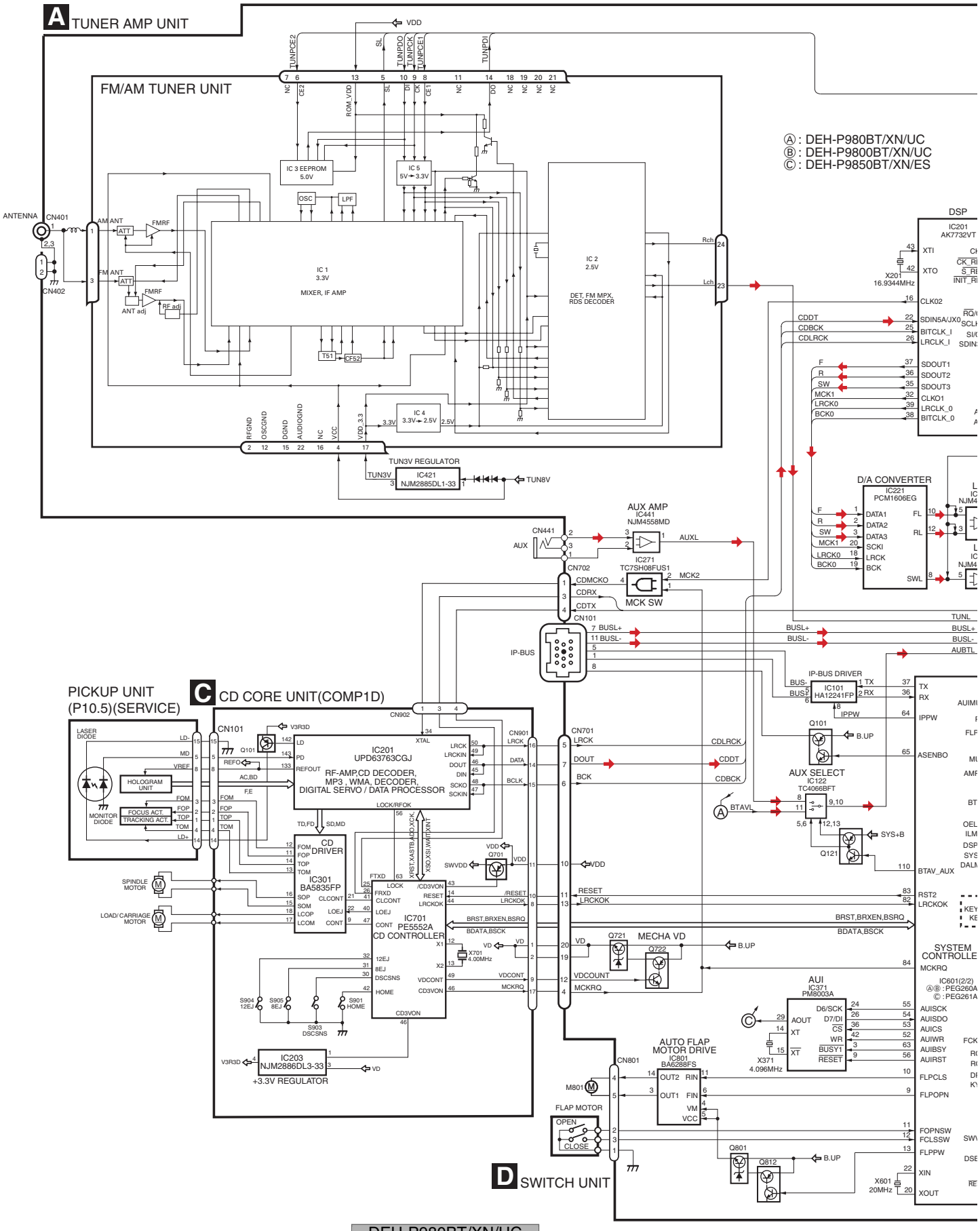


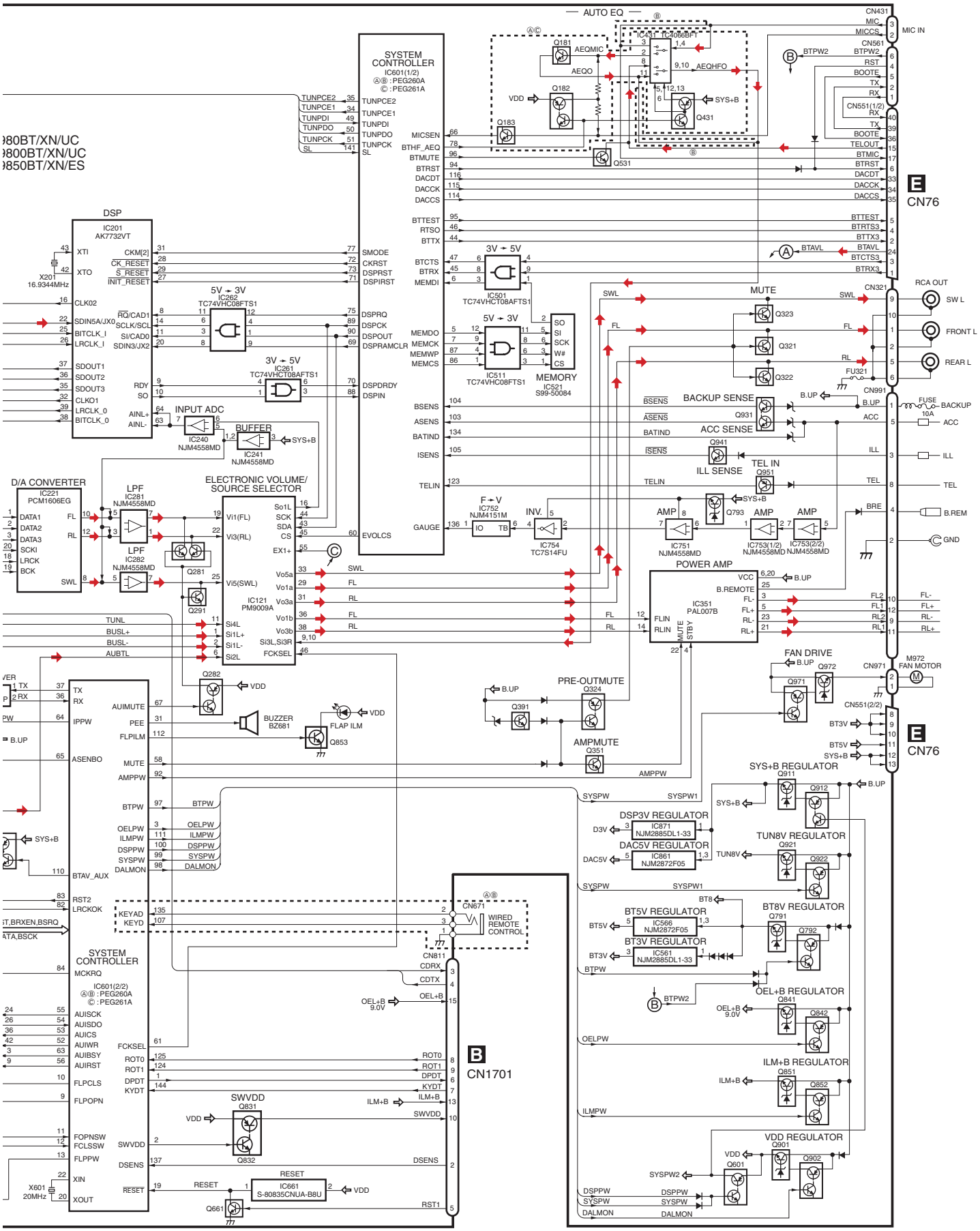
CD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	CD Core Unit(COMP1D)	CWX3328
	2	Connector(CN101)	CKS4182
	3	Connector(CN901)	CKS4187
	4	Screw	BMZ20P025FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2 x 3)	CBA1511
	7	Screw(M2 x 4)	CBA1835
	8	Washer	CBF1038
	9	•••••	
	10	Spring	CBH2609
	11	Spring	CBH2612
	12	Spring	CBH2614
	13	Spring	CBH2616
	14	Spring	CBH2617
	15	Spring	CBH2620
	16	Spring	CBH2855
	17	Spring	CBH2937
	18	Spring	CBH2735
	19	Spring	CBH2854
	20	Spring	CBH2642
	21	Spring	CBH2856
	22	Spring	CBH2857
	23	Spring	CBH2860
	24	Spring	CBH2861
	25	Spring	CBL1686
	26	Arm	CND1909
	27	Frame	CND2582
	28	Bracket	CND2583
	29	Arm	CND2584
	30	Lever	CND2585
	31	Arm	CND2586
	32	Bracket	CND2587
	33	Arm	CND2588
	34	Lever	CND2589
	35	Holder	CNV7201
	36	Gear	CNV7207
	37	Gear	CNV7208
	38	Gear	CNV7209
	39	Gear	CNV7210
	40	Gear	CNV7211
	41	Gear	CNV7212
	42	Rack	CNV7214
	43	Arm	CNV7216
	44	Roller	CNV7218
	45	Gear	CNV7219
	46	Guide	CNV7361
	47	Gear	CNV7595
	48	Guide	CNV7799
	49	Arm	CNV7805
	50	Rack	CNV8342
	51	Roller	CNV8343
	52	Holder	CNV8344
	53	Arm	CNV8345
	54	Guide	CNV8347
	55	Arm	CNV8348
	56	Arm	CNV8349
	57	Arm	CNV8350
	58	Clamper	CNV8365
	59	Arm	CNV8386
	60	Guide	CNV8396
	61	Arm	CNV8413
	62	Collar	CNV8938
	63	Motor Unit(M2)	CXC4026
	64	Arm Unit	CXC4027
	65	Chassis Unit	CXC4028
	66	Gear Unit	CXC4029
	67	Frame Unit	CXC4031
	68	Motor Unit(M1)	CXC6742
	69	Screw Unit	CXC6359
	70	Screw	JFZ20P020FTC
	71	Screw	JGZ17P022FTC
	72	Washer	YE20FTC
	73	Pickup Unit(P10.5)(Service)	CXX1942
	74	Screw	IMS26P030FTC
	75	Connector(CN902)	CKS4979

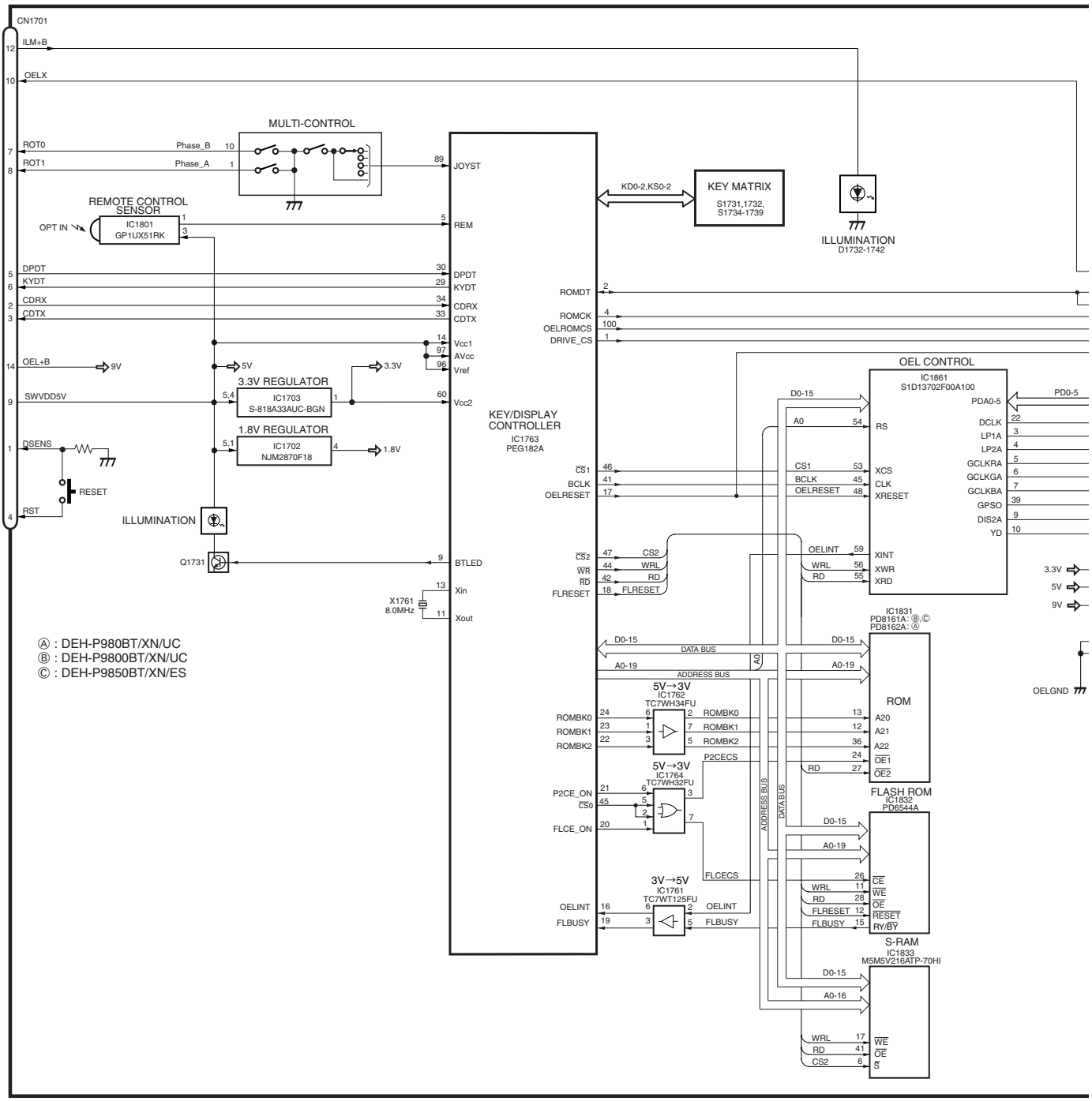
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

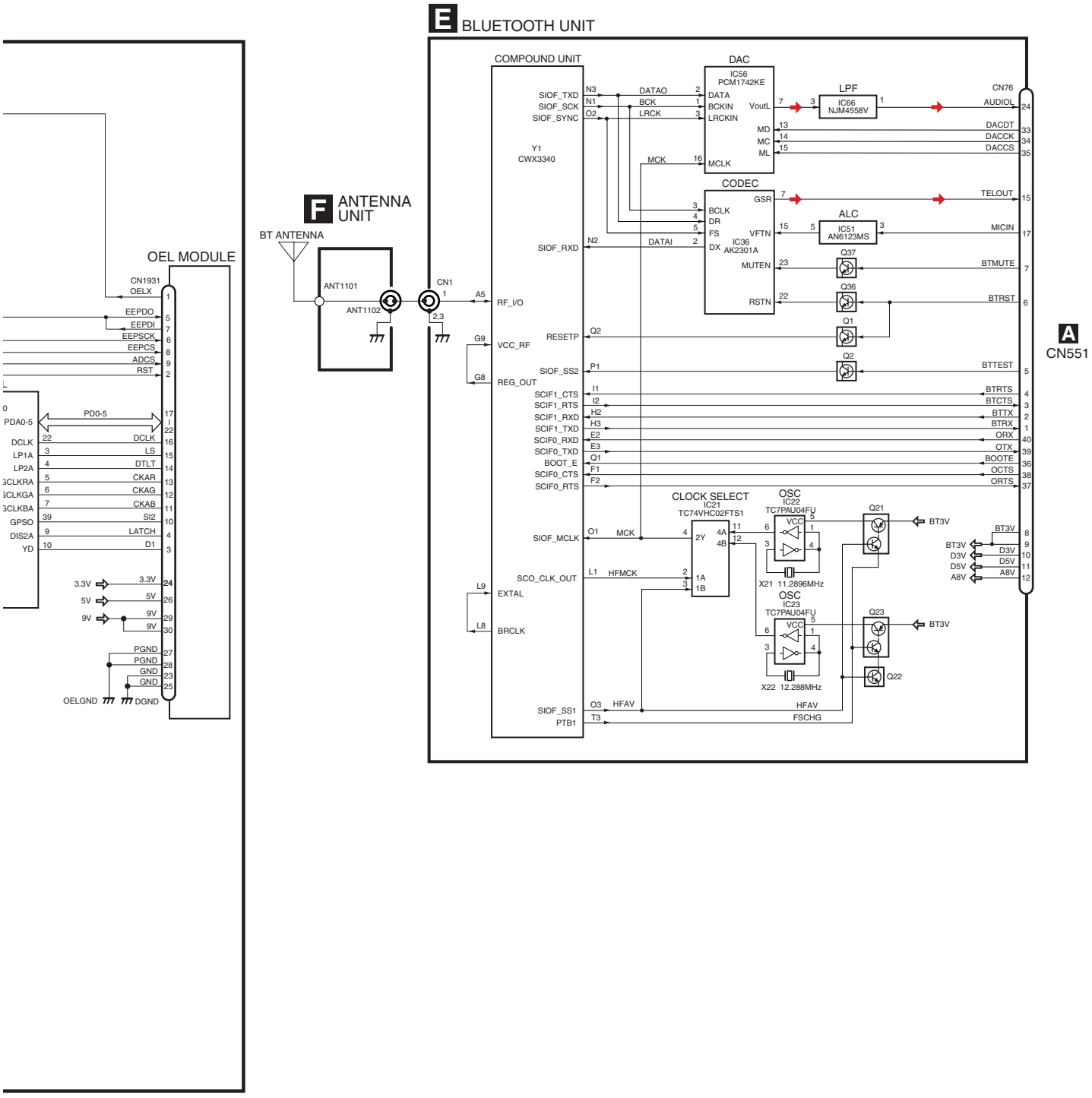
3.1 BLOCK DIAGRAM




AUTO EQ
SYSTEM CONTROLLER
IC601(1/2)
Ⓐ Ⓑ : PEG260A
Ⓒ : PEG261A
DSP
IC201
AK7732VT
X201
16.9344MHz
5V → 3V
IC262
TC74VHC08FTS1
3V → 5V
IC261
TC74VHCT08AFTS1
INPUT ADC
IC240
NJM4558MD
BUFFER
IC241
NJM4558MD
SYS+B
D/A CONVERTER
IC221
PCM1606EG
LPF
IC281
NJM4558MD
LPF
IC282
NJM4558MD
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC121
PM9009A
3V → 5V
IC501
TC74VHCT08AFTS1
5V → 3V
IC511
TC74VHC08FTS1
MEMORY
IC521
S99-50084
F → V
IC752
NJM4151M
INV.
IC754
TC7S14FU
MUTE
BACKUP SENSE
ACC SENSE
ILL SENSE
TEL IN
AMP
IC751
NJM4558MD
AMP
IC753(1/2)
NJM4558MD
AMP
IC753(2/2)
NJM4558MD
POWER AMP
IC351
PAL007B
PRE-OUTMUTE
AMPMUTE
FAN DRIVE
FAN MOTOR
SYS+B REGULATOR
DSP3V REGULATOR
IC871
NJM2885DL1-33
DAC5V REGULATOR
IC861
NJM2872F05
TUN8V REGULATOR
BT5V REGULATOR
IC566
NJM2872F05
BT3V REGULATOR
IC561
NJM2885DL1-33
BT8V REGULATOR
OEL+B REGULATOR
ILM+B REGULATOR
VDD REGULATOR
SYSTEM CONTROLLER
IC601(2/2)
Ⓐ Ⓑ : PEG260A
Ⓒ : PEG261A
SWVDD
IC661
S-80835CNUA-B8U
RESET
X601
20MHz
WIRED REMOTE CONTROL
CN671
CN811
CN1701
CN431
CN561
CN551(1/2)
CN551(2/2)
CN321
CN991
CN971
CN76
RCA OUT
SW L
FRONT L
REAR L
BACKUP
ACC
ILL
TEL
B.REM
GND
FL-
FL+
RL-
RL+
MIC IN
DEH-P980BT/XN/UC
980BT/XN/UC
800BT/XN/UC
850BT/XN/ES

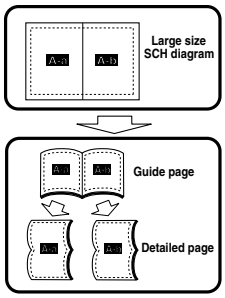
B KEYBOARD UNIT



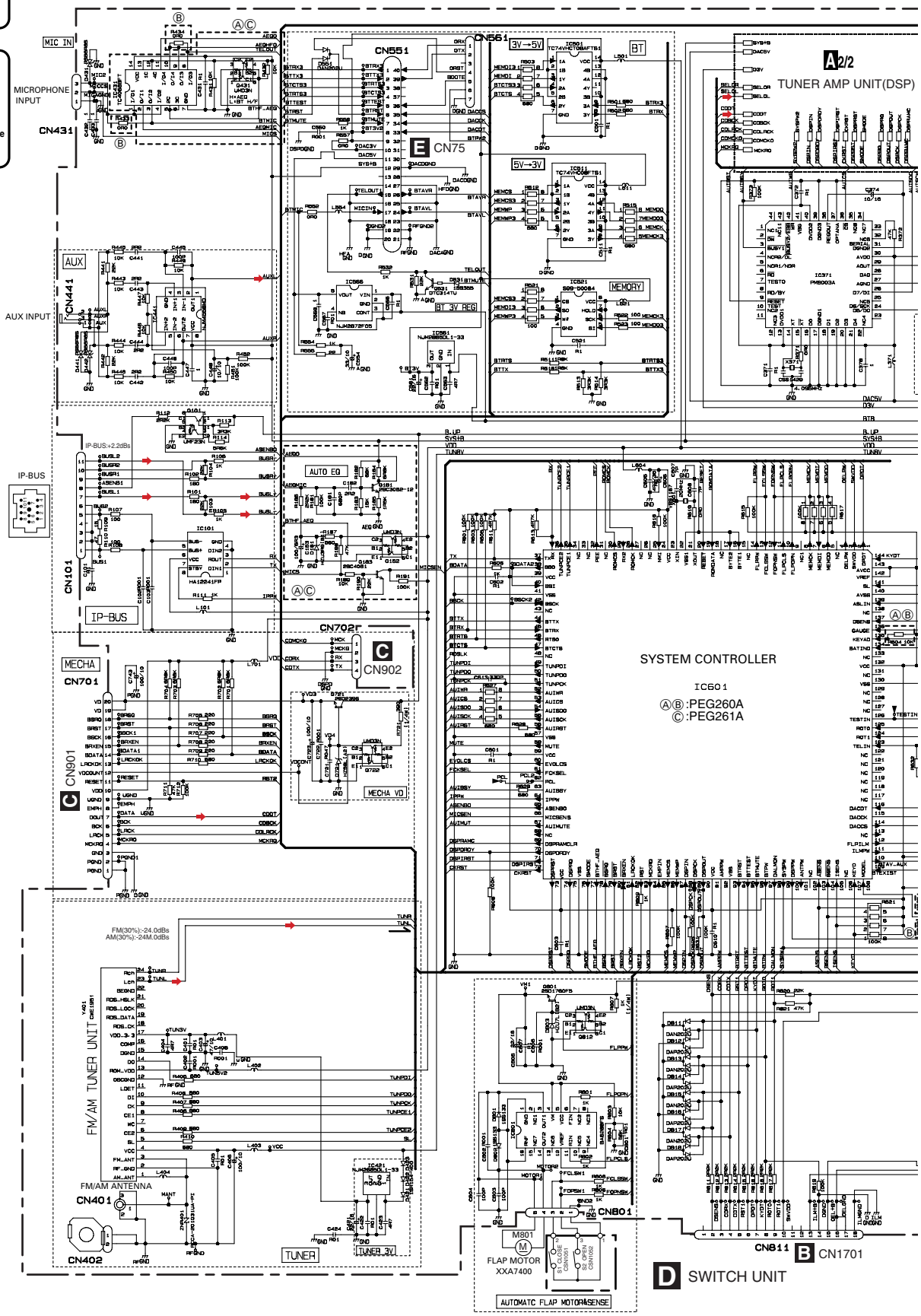

E BLUETOOTH UNIT
COMPOUND UNIT
DAC
IC56
PCM1742KE
LPF
IC66
NJM4558V
CN76
AUDIOL
DACDT
DACCK
DACCS
Y1
CWX3340
MCK
CODEC
IC36
AK2301A
GSR
TELOUT
BCLK
DR
FS
DX
ALC
IC51
AN6123MS
VFTN
MICIN
MUTEN
BTMUTE
RSTN
BTRST
F ANTENNA UNIT
BT ANTENNA
ANT1101
ANT1102
CN1
RF_I/O
VCC_RF
RESETP
REG_OUT
SIOF_SS2
BTTEST
SCIF1_CTS
SCIF1_RTS
SCIF1_RXD
SCIF1_TXD
SCIF0_RXD
SCIF0_TXD
BOOT_E
SCIF0_CTS
SCIF0_RTS
BTRTS
BTCTS
BTTX
BTRX
ORX
OTX
BOOTE
OCTS
ORTS
CLOCK SELECT
IC21
TC74VHC02FTS1
OSC
IC22
TC7PAU04FU
IC23
X21 11.2896MHz
X22 12.288MHz
SIOF_MCLK
SCO_CLK_OUT
EXTAL
BRCLK
HFMCK
HFAV
FSCHG
SIOF_SS1
PTB1
BT3V
D3V
D5V
A8V
A CN551
OEL MODULE
CN1931
OELX
EEPDO
EEPDI
EEPSCK
EEPCS
ADCS
RST
PDA0-5
PD0-5
DCLK
LS
DTLT
CKAR
CKAG
CKAB
SI2
LATCH
D1
3.3V
5V
9V
PGND
GND
OELGND
DGND

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

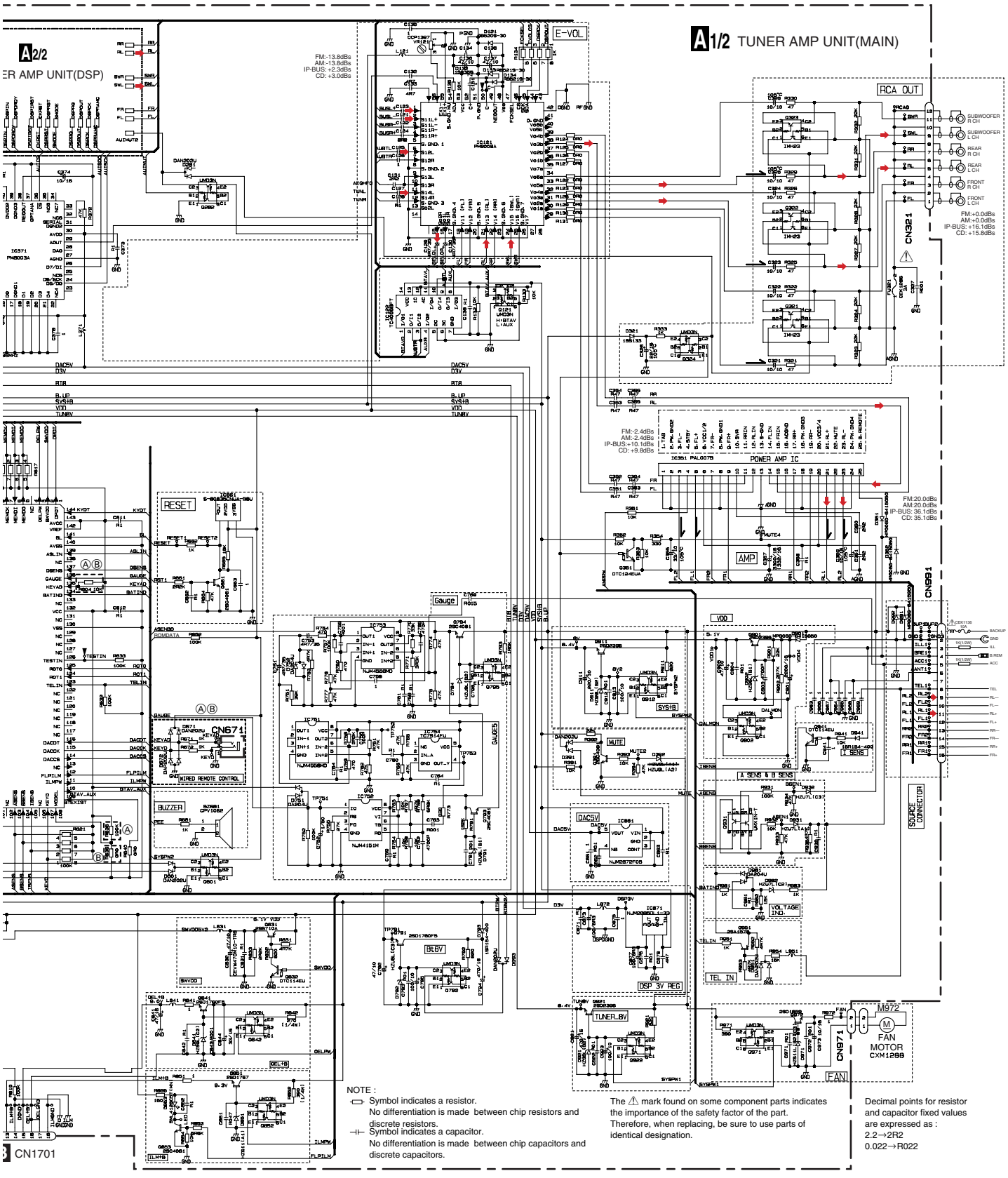
Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



Ⓐ : DEH-P980BT/XN/UC
Ⓑ : DEH-P9800BT/XN/UC
Ⓒ : DEH-P9850BT/XN/ES



A-b 1/2



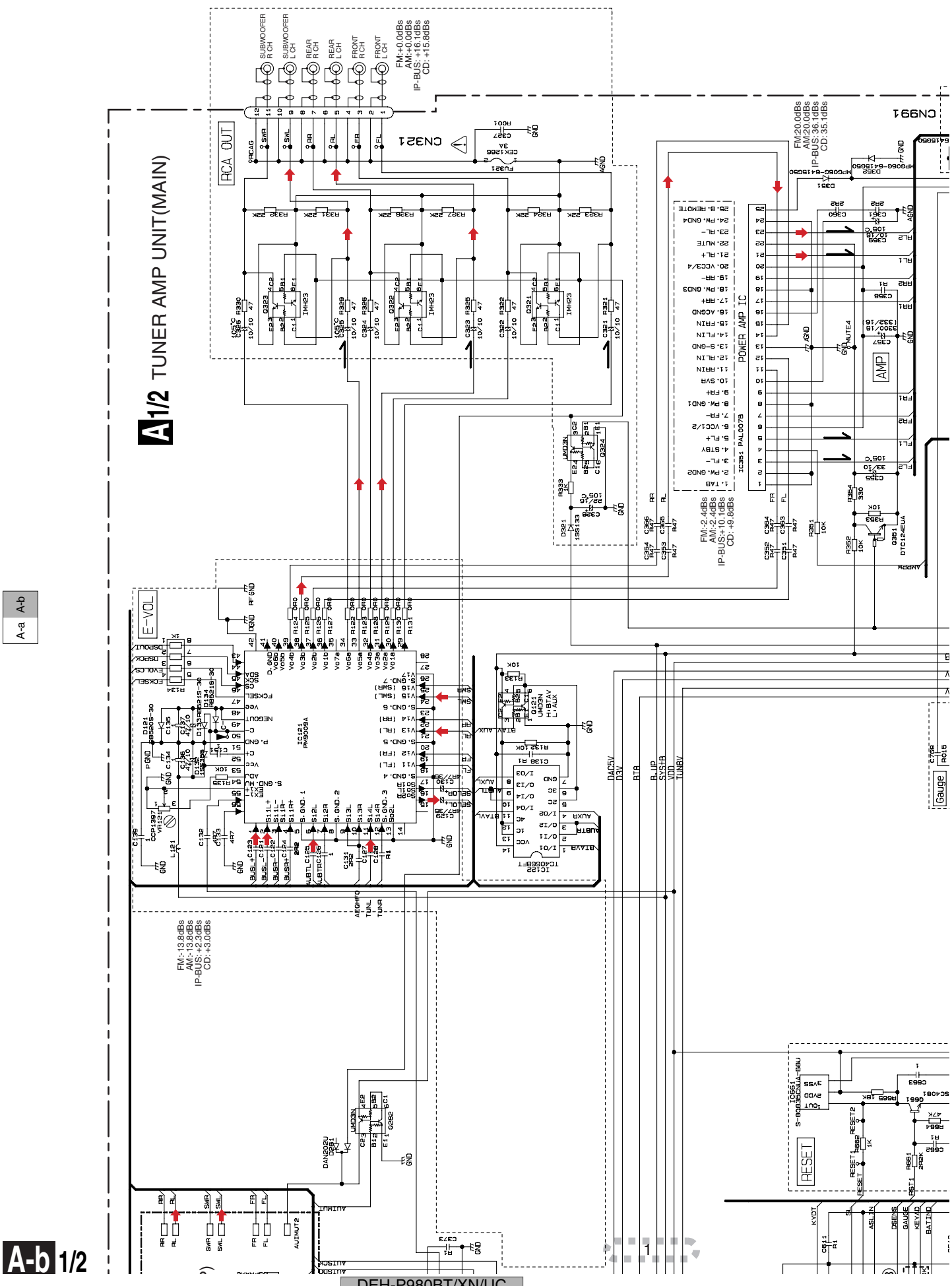
NOTE :

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

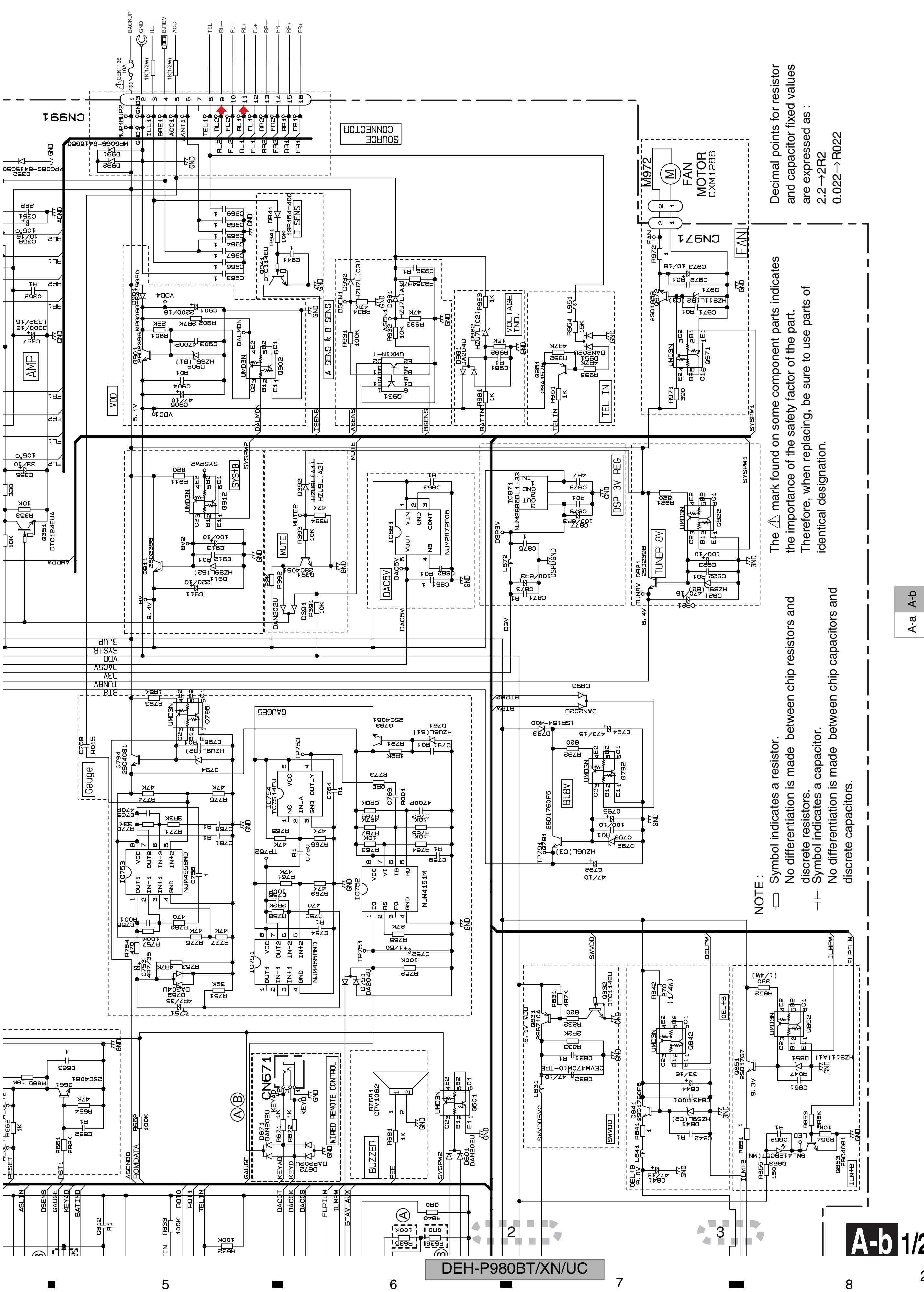
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

A1/2


A1/2 TUNER AMP UNIT(MAIN)
RCA OUT
CN321
CN991
SUBWOOFER R CH
SUBWOOFER L CH
REAR R CH
REAR L CH
FRONT R CH
FRONT L CH
FM:+0.0dBs
AM:+0.0dBs
IP-BUS:+16.1dBs
CD:+15.8dBs
FM:20.0dBs
AM:20.0dBs
IP-BUS:36.1dBs
CD:35.1dBs
POWER AMP IC
IC351 PAL007B
AMP
MUTE4
FM:-2.4dBs
AM:-2.4dBs
IP-BUS:+10.1dBs
CD:+9.8dBs
E-VOL
IC121 PW9059A
IC1252 TC4066BFT
FM:-13.8dBs
AM:-13.8dBs
IP-BUS:+2.3dBs
CD:+3.0dBs
RESET
Gauge
A-b 1/2

A-b
A-a



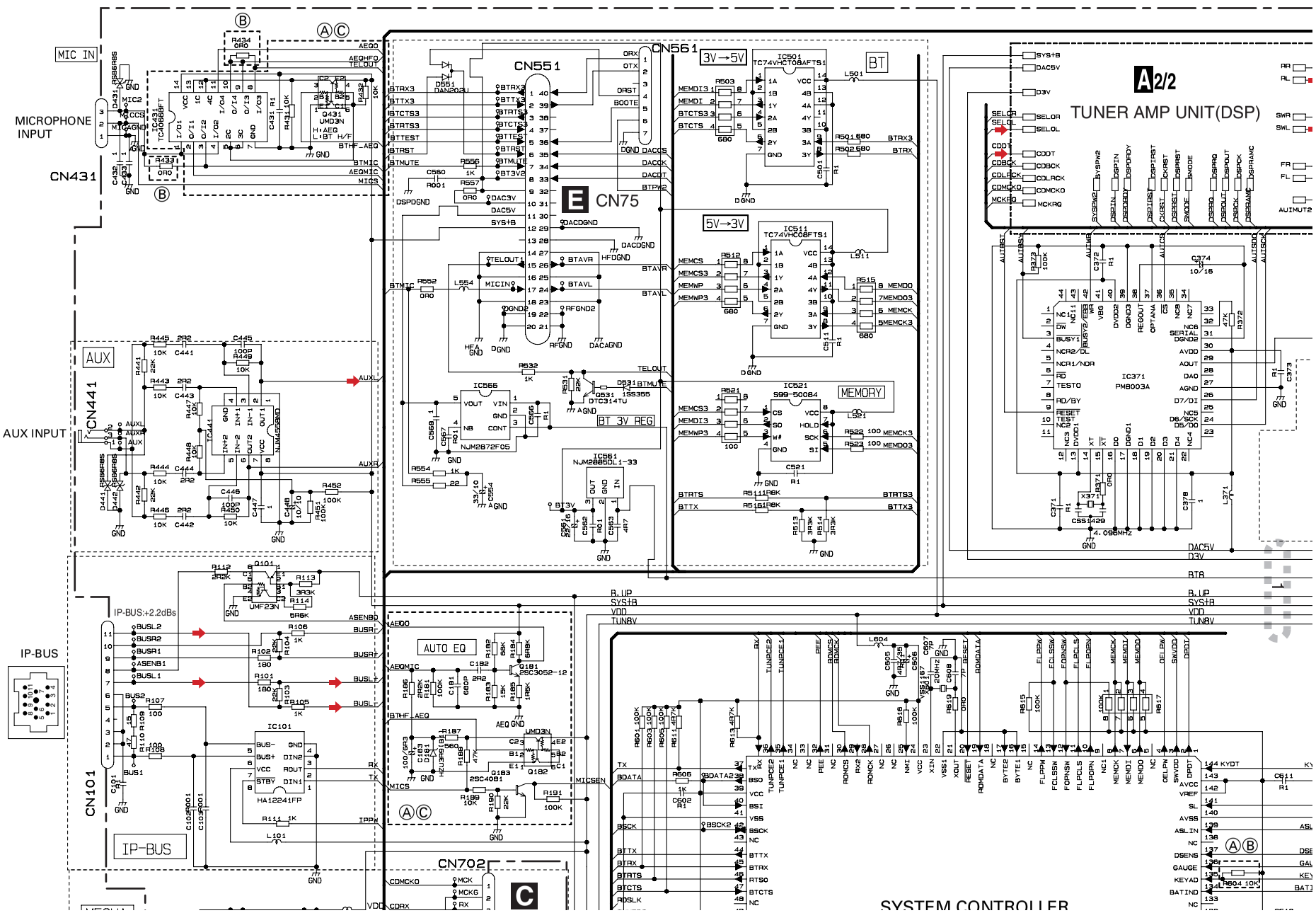
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

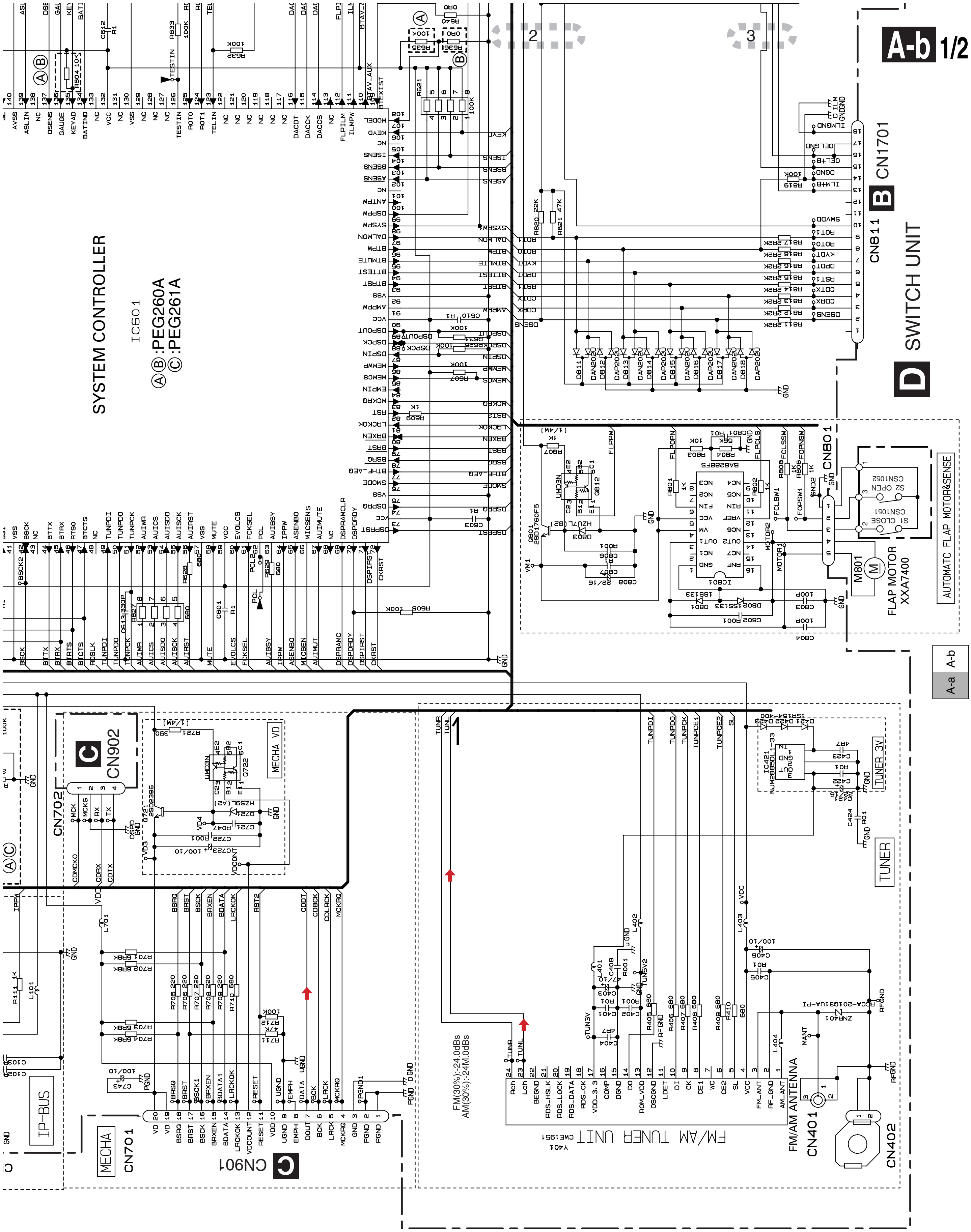
The [warning triangle] mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

NOTE :
[resistor symbol] Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
[capacitor symbol] Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

A-b 1/2

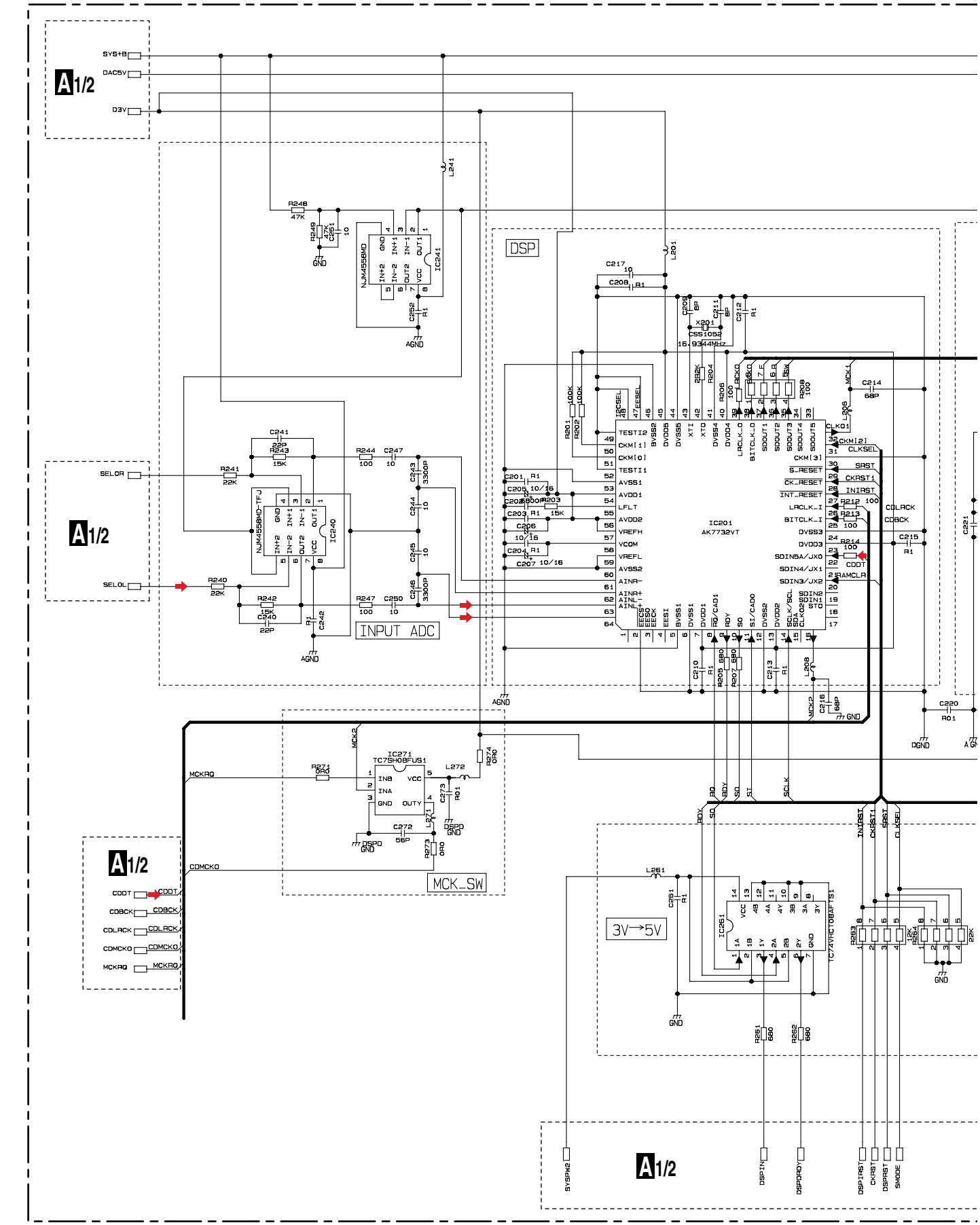
Ⓐ : DEH-P980BT/XN/UC
Ⓑ : DEH-P9800BT/XN/UC
Ⓒ : DEH-P9850BT/XN/ES



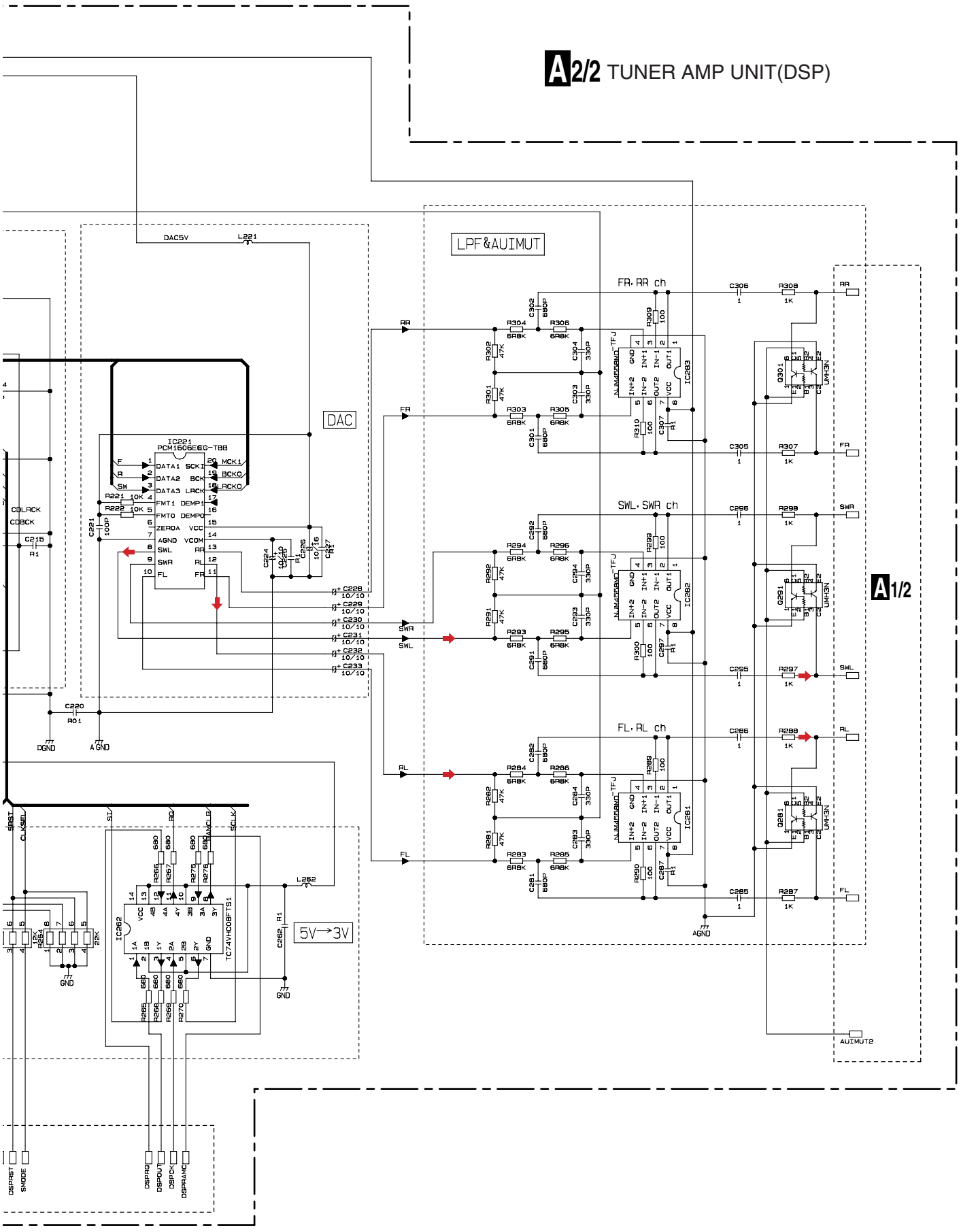

A-b 1/2
SYSTEM CONTROLLER
IC601
Ⓐ Ⓑ :PEG260A
Ⓒ :PEG261A
SWITCH UNIT
D
CN811
B CN1701
CN801
AUTOMATIC FLAP MOTOR&SENSE
FLAP MOTOR
XXA7400
M801
TUNER
FM/AM TUNER UNIT
Y401 CWE1951
FM/AM ANTENNA
CN401
CN402
MECHA VD
C CN902
CN702
C CN901
MECHA
CN701
IP-BUS
FM(30%):-24.0dBs
AM(30%):-24M.0dBs

A-a 1/2 D

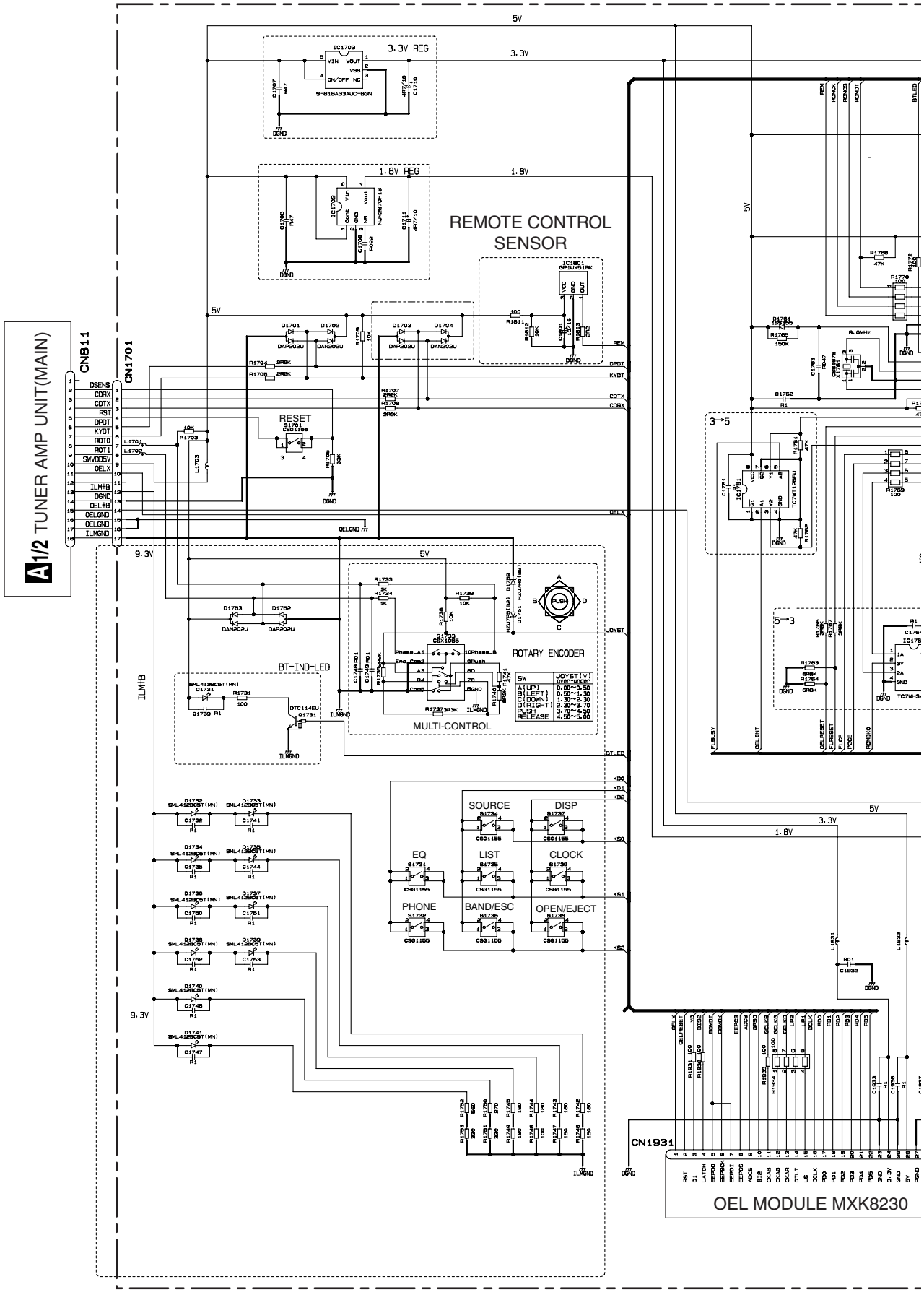
3.3 TUNER AMP UNIT(DSP)



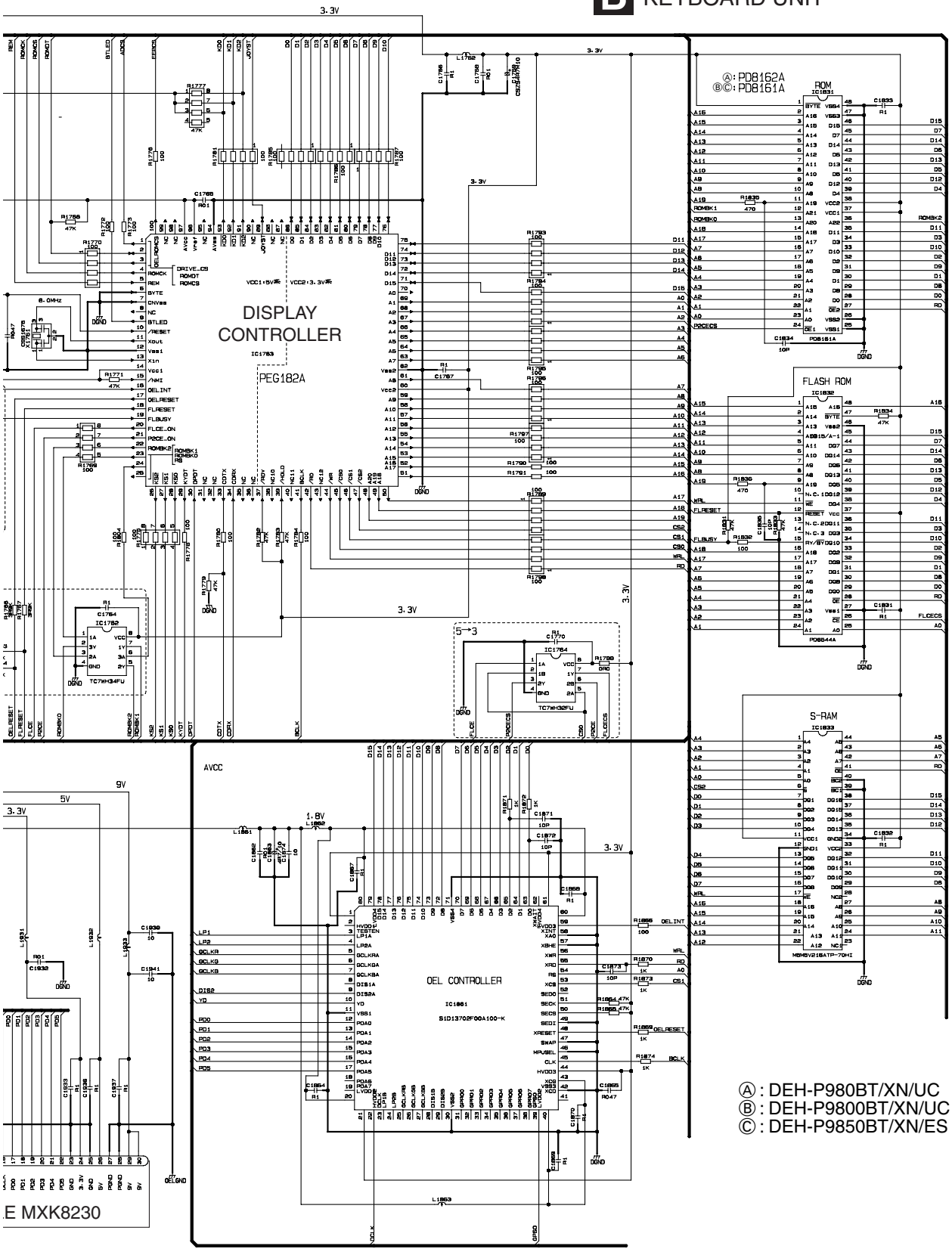
A2/2 TUNER AMP UNIT(DSP)



3.4 KEYBOARD UNIT

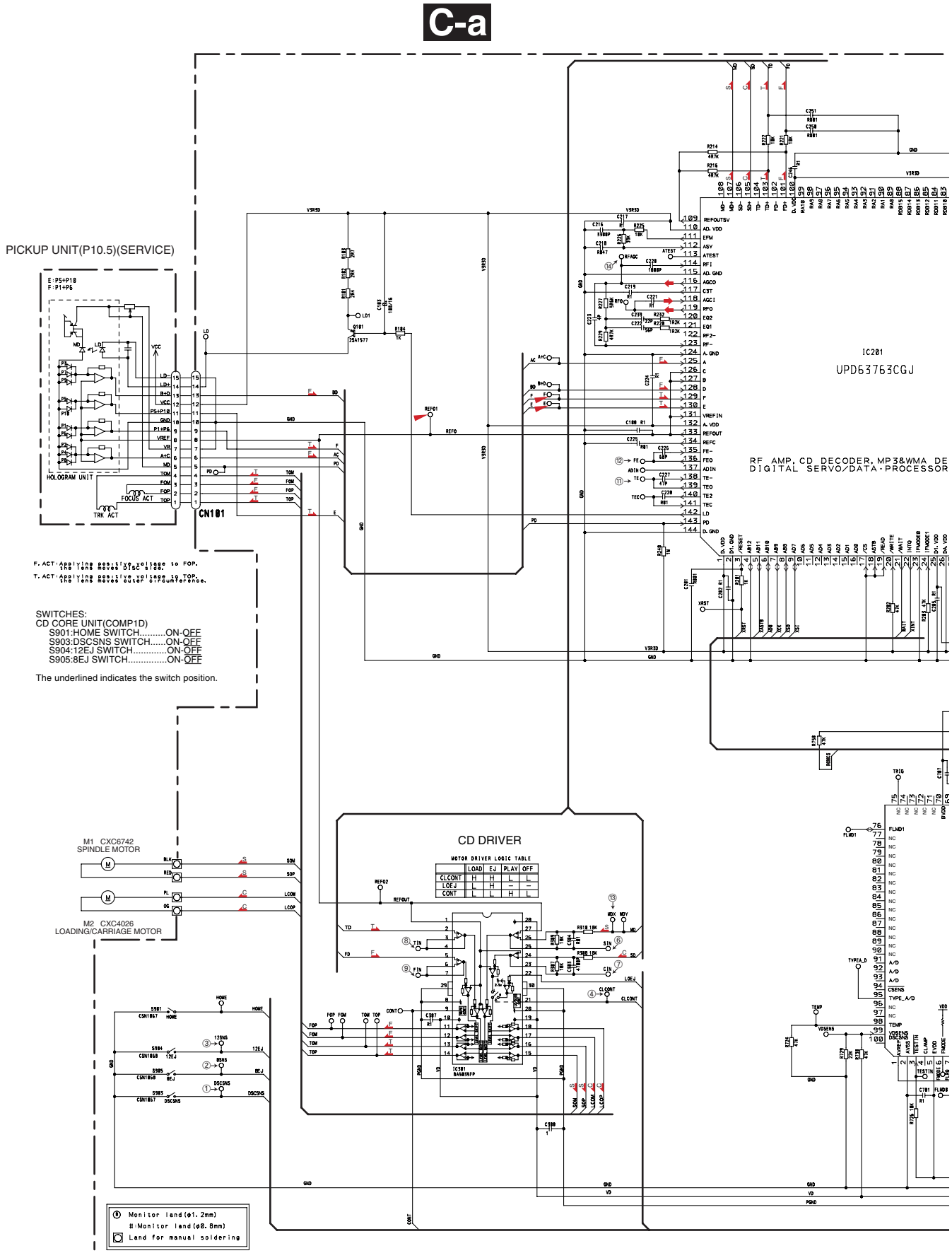


B KEYBOARD UNIT

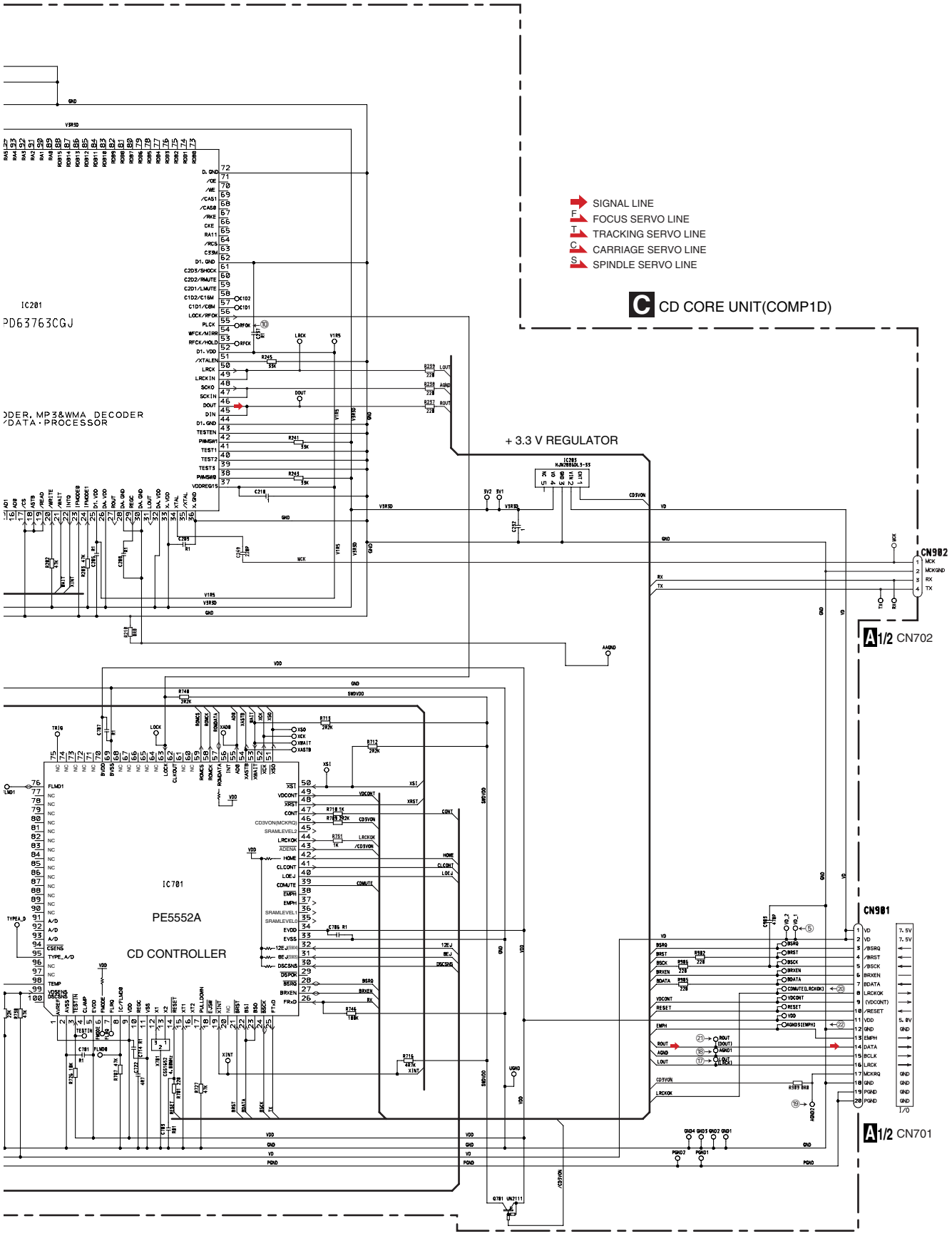


Ⓐ : DEH-P980BT/XN/UC
Ⓑ : DEH-P9800BT/XN/UC
Ⓒ : DEH-P9850BT/XN/ES

3.5 CD CORE UNIT(COMP1D)(GUIDE PAGE)



C-b


SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
C CD CORE UNIT(COMP1D)
+ 3.3 V REGULATOR
IC201
PD63763CGJ
DER, MP3&WMA DECODER
DATA PROCESSOR
IC701
PE5552A
CD CONTROLLER
CN902
CN981
A1/2 CN702
A1/2 CN701

SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE

C CD CORE UNIT(COMP1D)

IC201
D63763CGJ

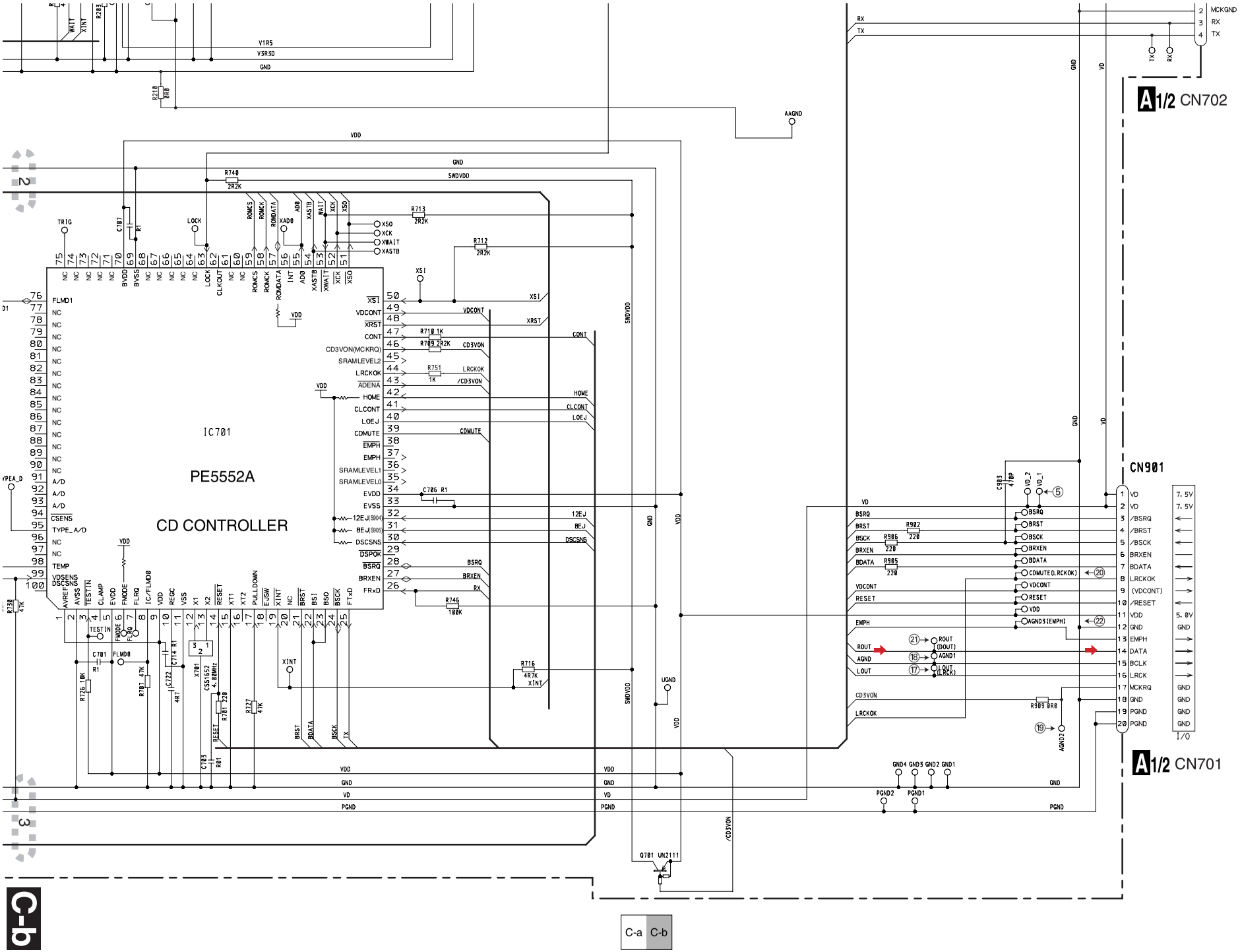
DER, MP3&WMA DECODER
DATA · PROCESSOR

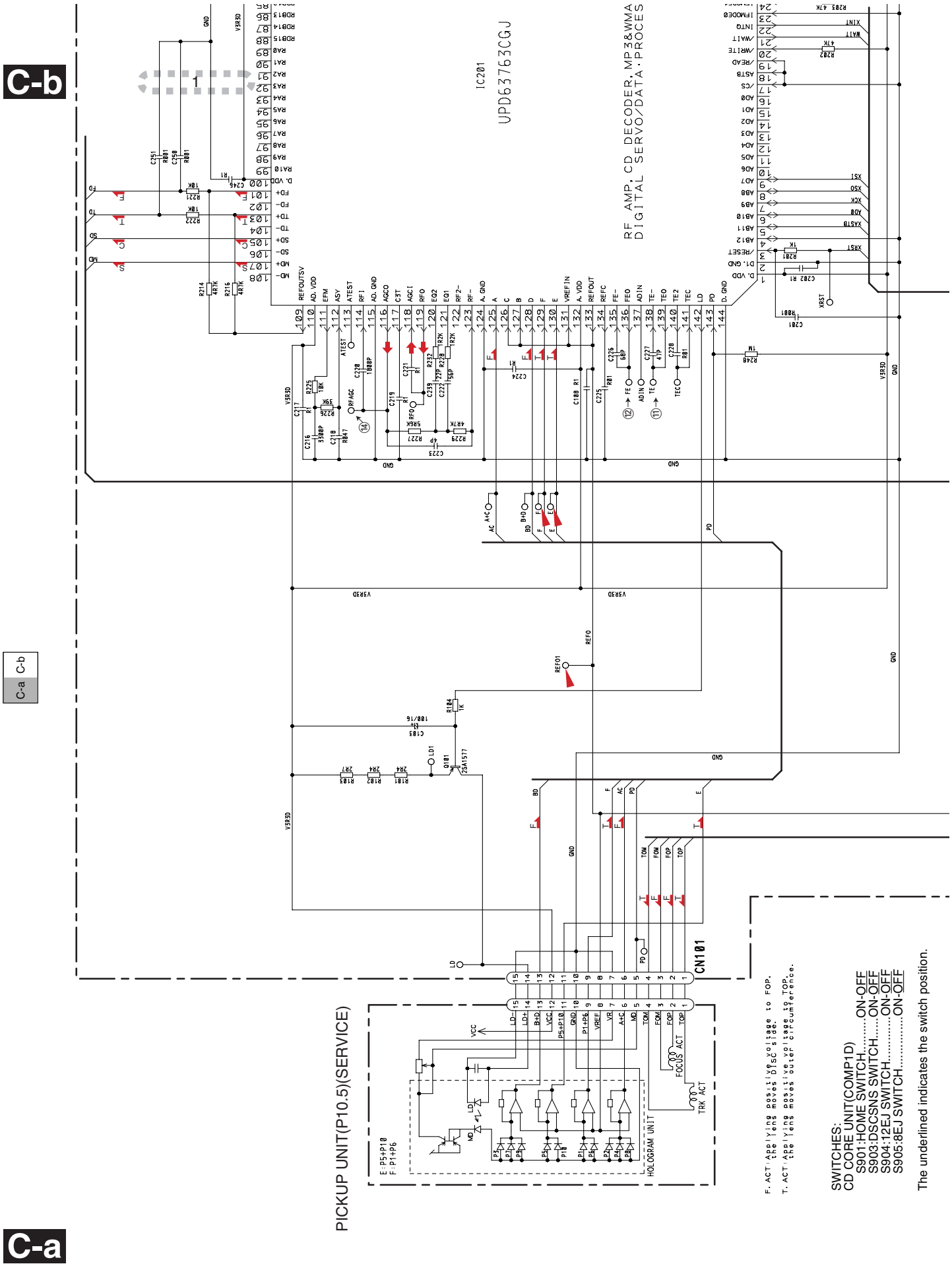
+ 3.3 V REGULATOR

IC203
NJM2886DL3-33

CN902
1 MCK
2 MCKGND
3 RX
4 TX

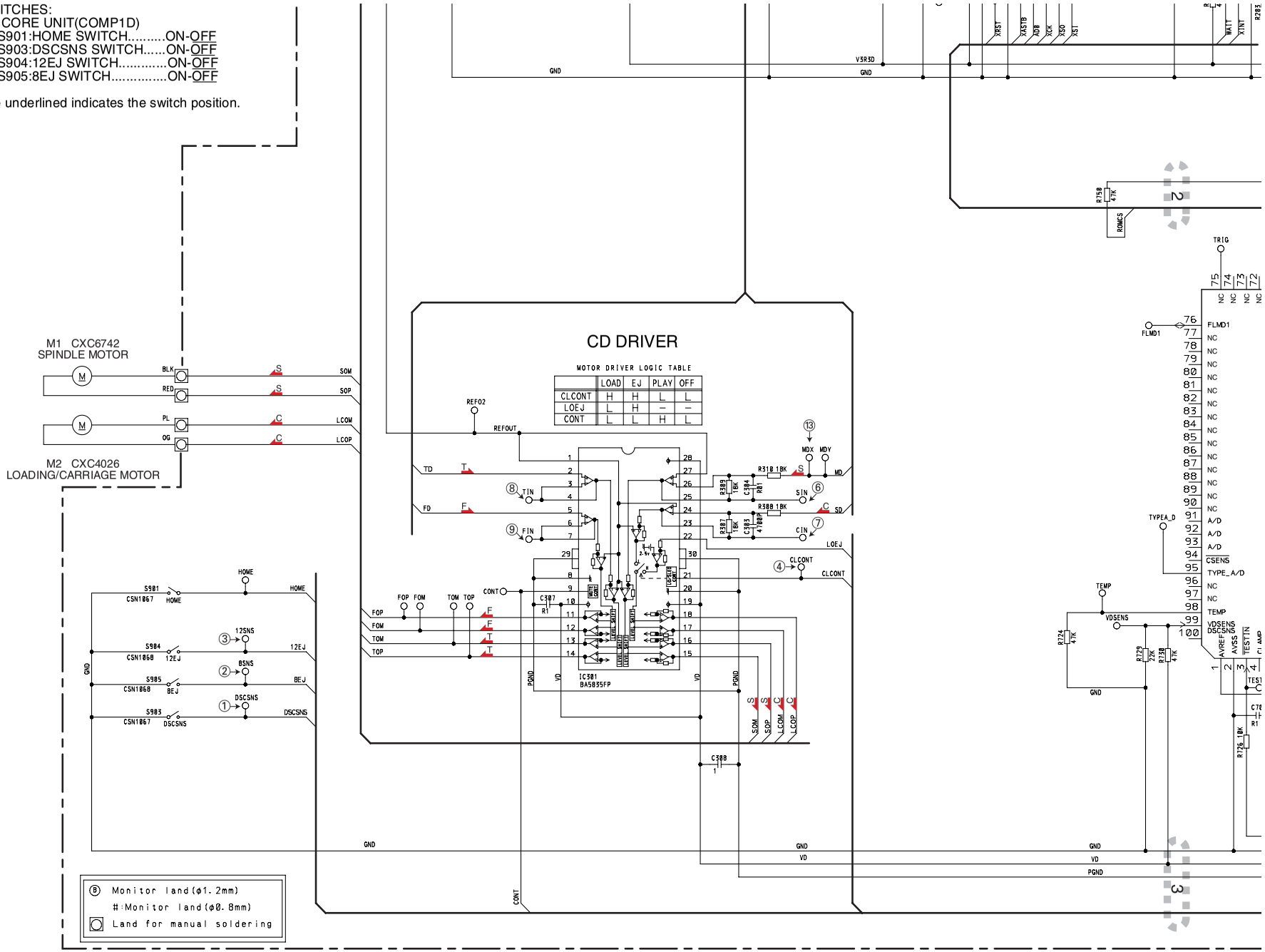
A 1/2 CN702


DEH-P980BT/XN/UC
C-b
C-a C-b
IC701
PE5552A
CD CONTROLLER
CN901
A1/2 CN702
A1/2 CN701
TRIG
LOCK
XSO
XCK
XWAIT
XASTB
XSI
XRST
VDCONT
CONT
CD3VON
LRCKOK
/CD3VON
HOME
CLCONT
LOEJ
CDMUTE
12EJ
BEJ
DSCSNS
BSRQ
BRXEN
RX
TX
XINT
RESET
TESTIN
FLMD0
FLMD1
VDD
GND
SWDVDD
VD
PGND
UGND
AAGND
Q701 UN2111
BSRQ
BRST
BSCK
BRXEN
BDATA
CDMUTE(LRCKOK)
VDCONT
RESET
EMPH
ROUT (DOUT)
AGND1
LOUT (LRCK)
CD3VON
LRCKOK
AGND2
MCKGND
7.5V
5.0V
I/O


C-b
C-a
IC201
UPD63763CGJ
RF AMP, CD DECODER, MP3&WMA
DIGITAL SERVO/DATA PROCES
PICKUP UNIT(P10.5)(SERVICE)
E: P5+P10
F: P1+P6
HOLOGRAM UNIT
FOCUS ACT
TRK ACT
CN101
F. ACT Applying positive voltage to FOP.
T. ACT Applying positive voltage to TOP.
SWITCHES:
CD CORE UNIT(COMP1D)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF
The underlined indicates the switch position.

SWITCHES:
CD CORE UNIT(COMP1D)
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF
S904:12EJ SWITCH.....ON-OFF
S905:8EJ SWITCH.....ON-OFF

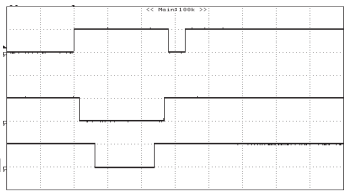
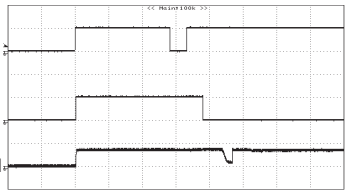
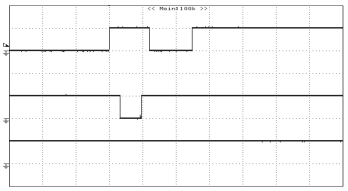
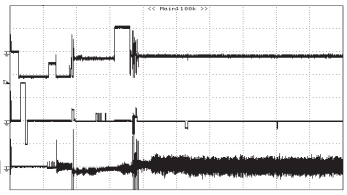
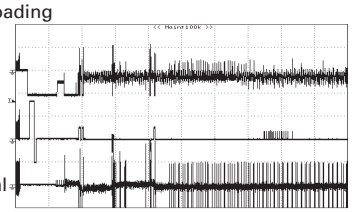
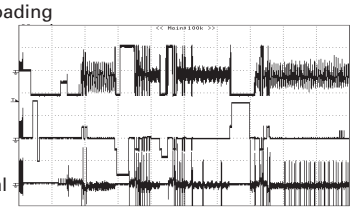
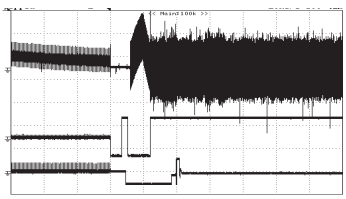
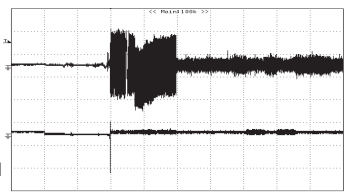
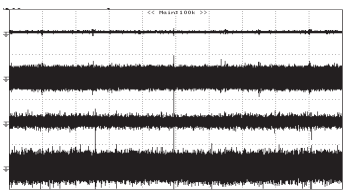
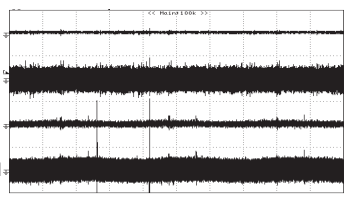
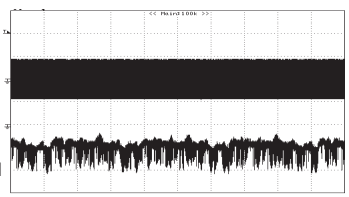
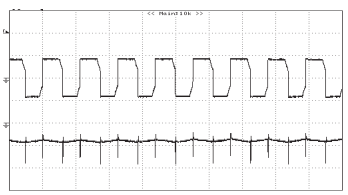
The underlined indicates the switch position.



C-a C-b

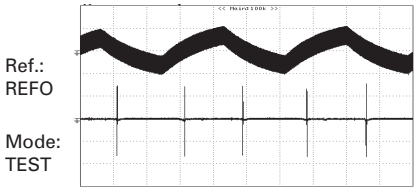
● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

① DSCSNS 5 V/div 500 ms/div ② 8SNS 5 V/div ③ 12SNS 5 V/div 12 cm CD Loading operation Ref.: GND Mode: Normal 	① DSCSNS 5 V/div 500 ms/div ④ CLCONT 5 V/div ⑤ VD 10 V/div 12 cm CD Loading operation Ref.: GND Mode: Normal 	① DSCSNS 5 V/div 500 ms/div ② 8SNS 5 V/div ③ 12SNS 5 V/div 8 cm CD Loading operation Ref.: GND Mode: Normal 
⑥ SIN 1 V/div 1 s/div ⑦ CIN 500 mV/div ⑧ TIN 500 mV/div 12 cm CD-DA setup operation after loading Ref.: REFO Mode: Normal 	⑥ SIN 1 V/div 1 s/div ⑦ CIN 500 mV/div ⑧ TIN 500 mV/div 12 cm CD-ROM(1 session) setup operation after loading Ref.: REFO Mode: Normal 	⑥ SIN 1 V/div 1 s/div ⑦ CIN 500 mV/div ⑧ TIN 500 mV/div 12 cm CD-ROM(3 sessions) setup operation after loading Ref.: REFO Mode: Normal 
⑨ FIN 200 mV/div 500 ms/div ⑩ RFOK 2 V/div ⑥ SIN 2 V/div 12 cm CD-DA Source On setup operation Ref.: REFO Mode: Normal 	⑪ TE 500 mV/div 200 ms/div ⑫ FE 500 mV/div Source On setup operation Ref.: REFO Mode: Normal 	⑫ FE 500 mV/div 20 ms/div ⑨ FIN 500 mV/div ⑪ TE 500 mV/div ⑧ TIN 500 mV/div CD-DA Play operation Ref.: REFO Mode: Normal 
⑫ FE 500 mV/div 20 ms/div ⑨ FIN 500 mV/div ⑪ TE 500 mV/div ⑧ TIN 500 mV/div CD-ROM play operation(Regular track Jump) Ref.: REFO Mode: Normal 	⑬ MDX 2 V/div 50 ms/div ⑥ SIN 200 mV/div Spindle waveform during play operation Ref.: REFO Mode: Normal 	⑬ MDX 2 V/div 5 µs/div ⑥ SIN 500 mV/div Spindle waveform during play operation (Wider) Ref.: REFO Mode: Normal 

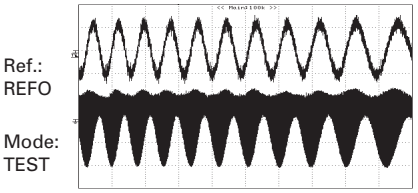
⑨ FIN	500 mV/div	200 ms/div
⑫ FE	500 mV/div	

Focus Search waveform



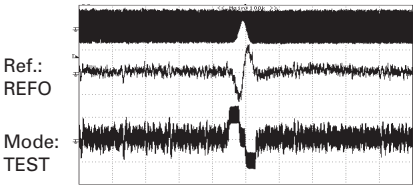
⑪ TE	500 mV/div	2 ms/div
⑭ RFAGC	500 mV/div	

Track Open waveform



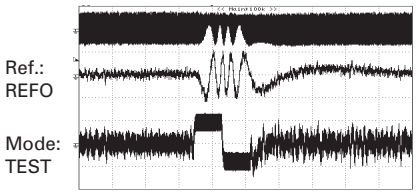
⑭ RFAGC	1 V/div	500 µs/div
⑪ TE	500 mV/div	
⑧ TIN	500 mV/div	

1 Track Jump waveform



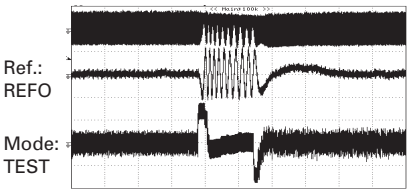
⑭ RFAGC	1 V/div	500 µs/div
⑪ TE	500 mV/div	
⑧ TIN	500 mV/div	

4 Tracks Jump waveform



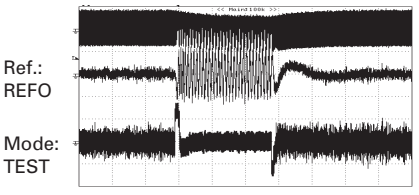
⑭ RFAGC	1 V/div	1 ms/div
⑪ TE	500 mV/div	
⑧ TIN	500 mV/div	

10 Tracks Jump waveform



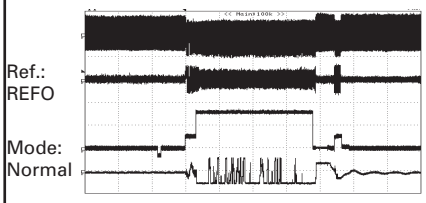
⑭ RFAGC	1 V/div	2 ms/div
⑪ TE	500 mV/div	
⑧ TIN	500 mV/div	

32 Tracks Jump waveform



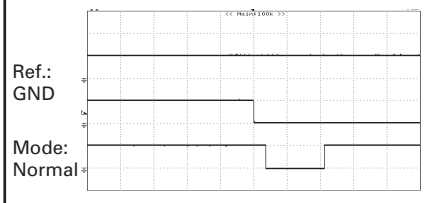
⑭ RFAGC	1 V/div	200 ms/div
⑪ TE	1 V/div	
⑦ CIN	500 mV/div	
⑥ SIN	2 V/div	

Search operation(Outter to Inner)



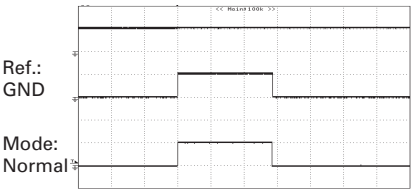
① DSCSNS	5 V/div	500 ms/div
② 8SNS	5 V/div	
③ 12SNS	5 V/div	

12 cm CD Eject operation



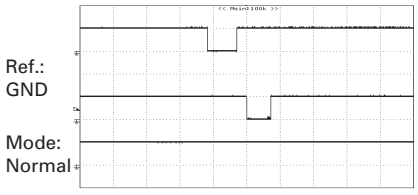
① DSCSNS	5 V/div	500 ms/div
⑤ CLCONT	5 V/div	
④ LOEJ	5 V/div	

12 cm CD Eject operation



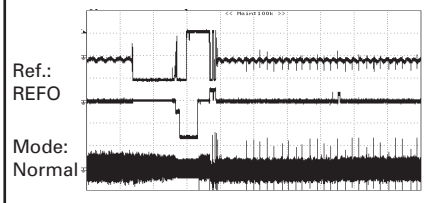
① DSCSNS	5 V/div	500 ms/div
② 8SNS	5 V/div	
③ 12SNS	5 V/div	

8 cm CD Eject operation



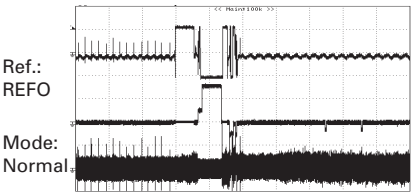
⑥ SIN	1 V/div	500 ms/div
⑦ CIN	500 mV/div	
⑧ TIN	500 mV/div	

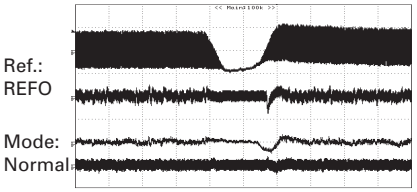
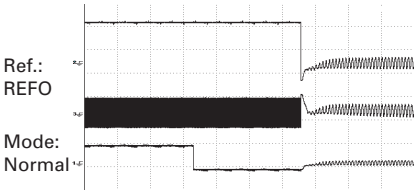
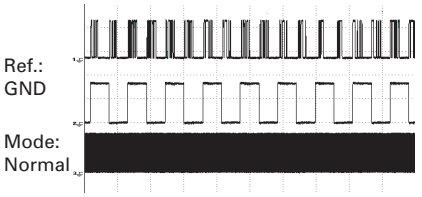
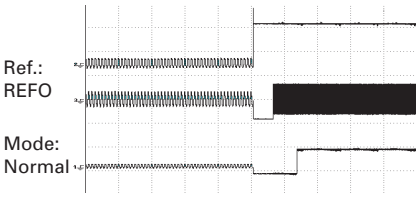
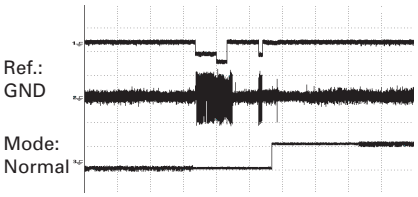
CD-DA → CD-ROM mode change(Band key)



⑥ SIN	1 V/div	500 ms/div
⑦ CIN	500 mV/div	
⑧ TIN	500 mV/div	

CD-ROM → CD-DA mode change(Band key)



⑭ RFAGC 1 V/div 500 µs/div ⑧ TIN 1 V/div ⑪ TE 1 V/div ⑨ FIN 1 V/div Black dot(800 µm) during play  	⑲ CD3VON 5 V/div 200 ms/div ⑰ LRCK 2 V/div ⑳ LRCKOK 2 V/div 12 cm CD Eject operation  	㉑ DOUT 2 V/div 20 µs/div ⑰ LRCK 2 V/div ⑱ BCK 2 V/div CD-DA play operation 
⑲ CD3VON 5 V/div 200 ms/div ⑰ LRCK 2 V/div ⑳ LRCKOK 2 V/div 12 cm CD-DA Source On setup operation  	⑦ CIN 500 mV/div 100 ms/div ⑪ TE 500 mV/div ㉒ EMPH 5 V/div Tracks Jump(EMPH : OFF → ON)  	

A

B

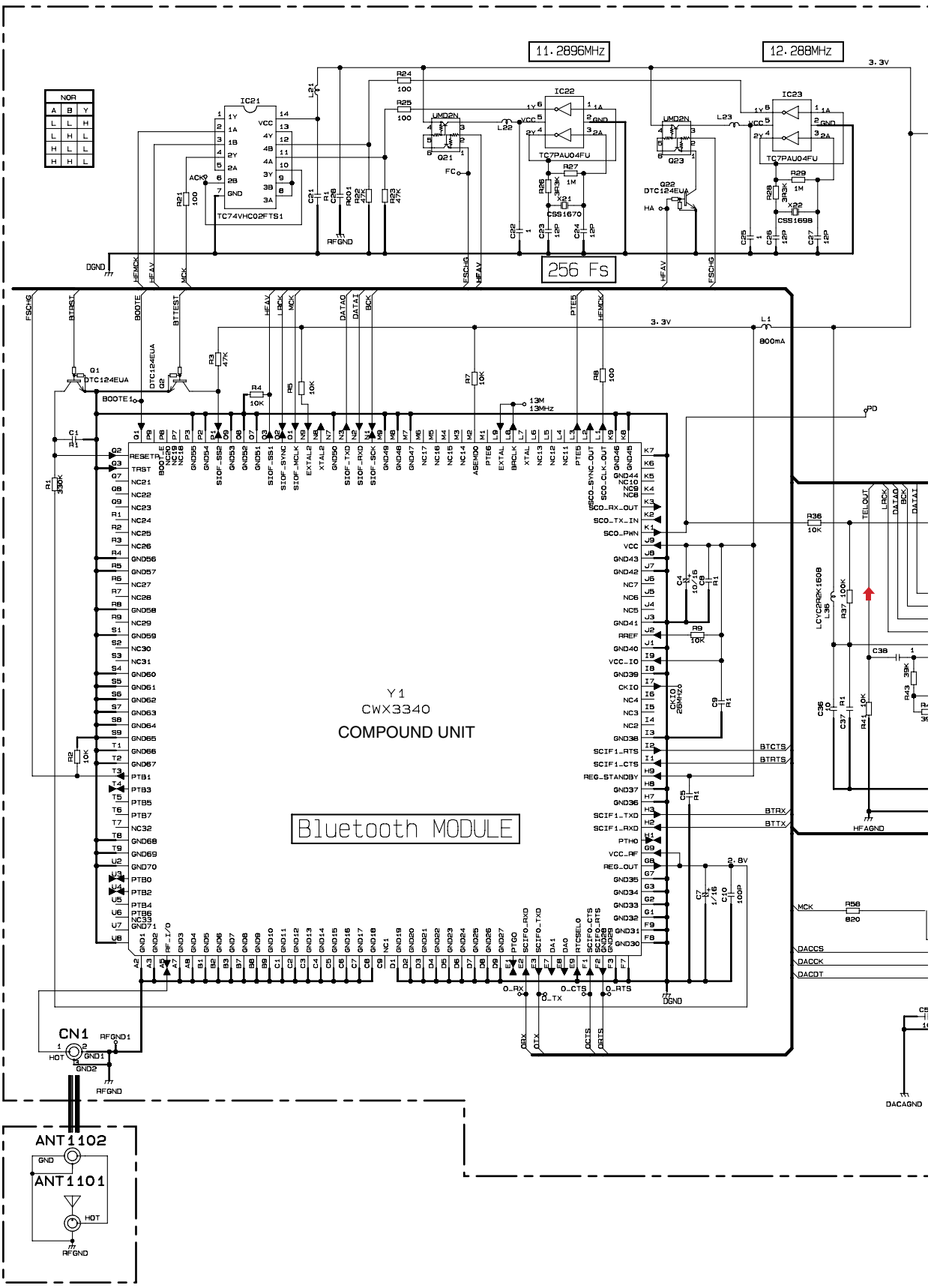
C

D

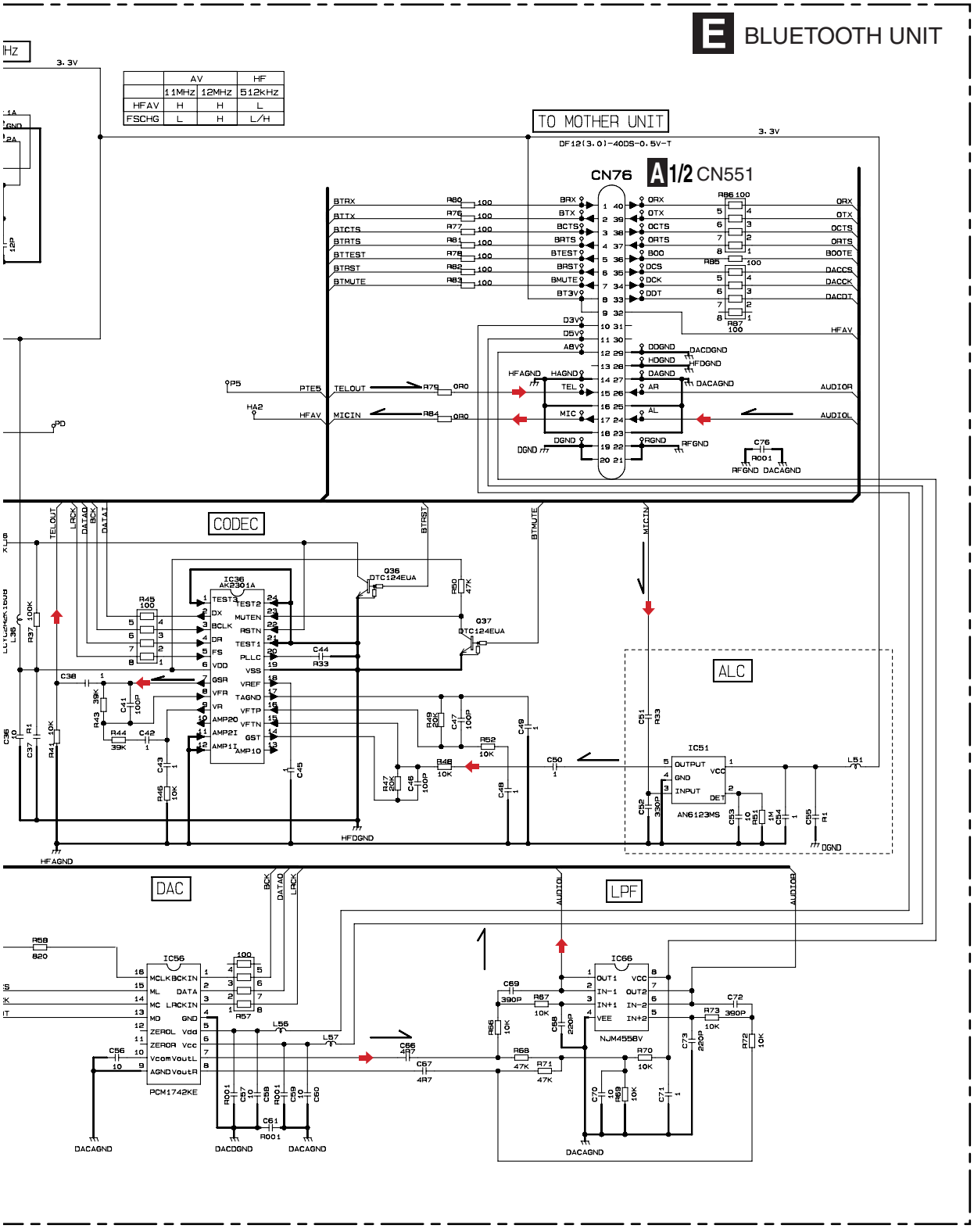
E

F

3.6 BLUETOOTH UNIT, ANTENNA UNIT



E BLUETOOTH UNIT

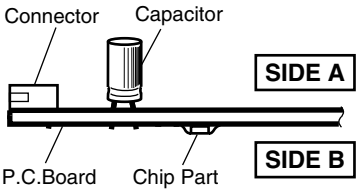


	AV		HF
	11MHz	12MHz	512kHz
HFAV	H	H	L
FSCHG	L	H	L/H

4. PCB CONNECTION DIAGRAM
4.1 TUNER AMP UNIT

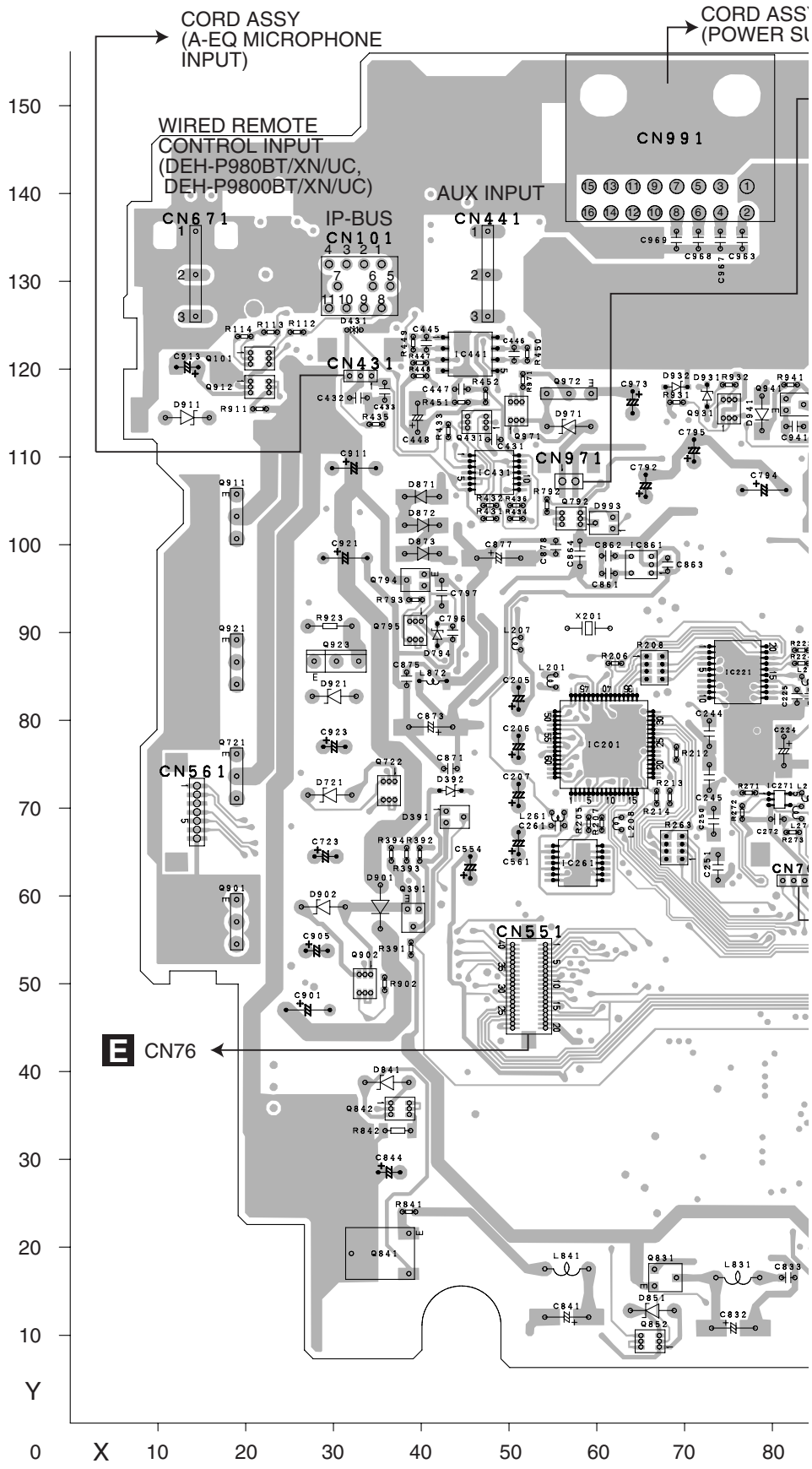
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams

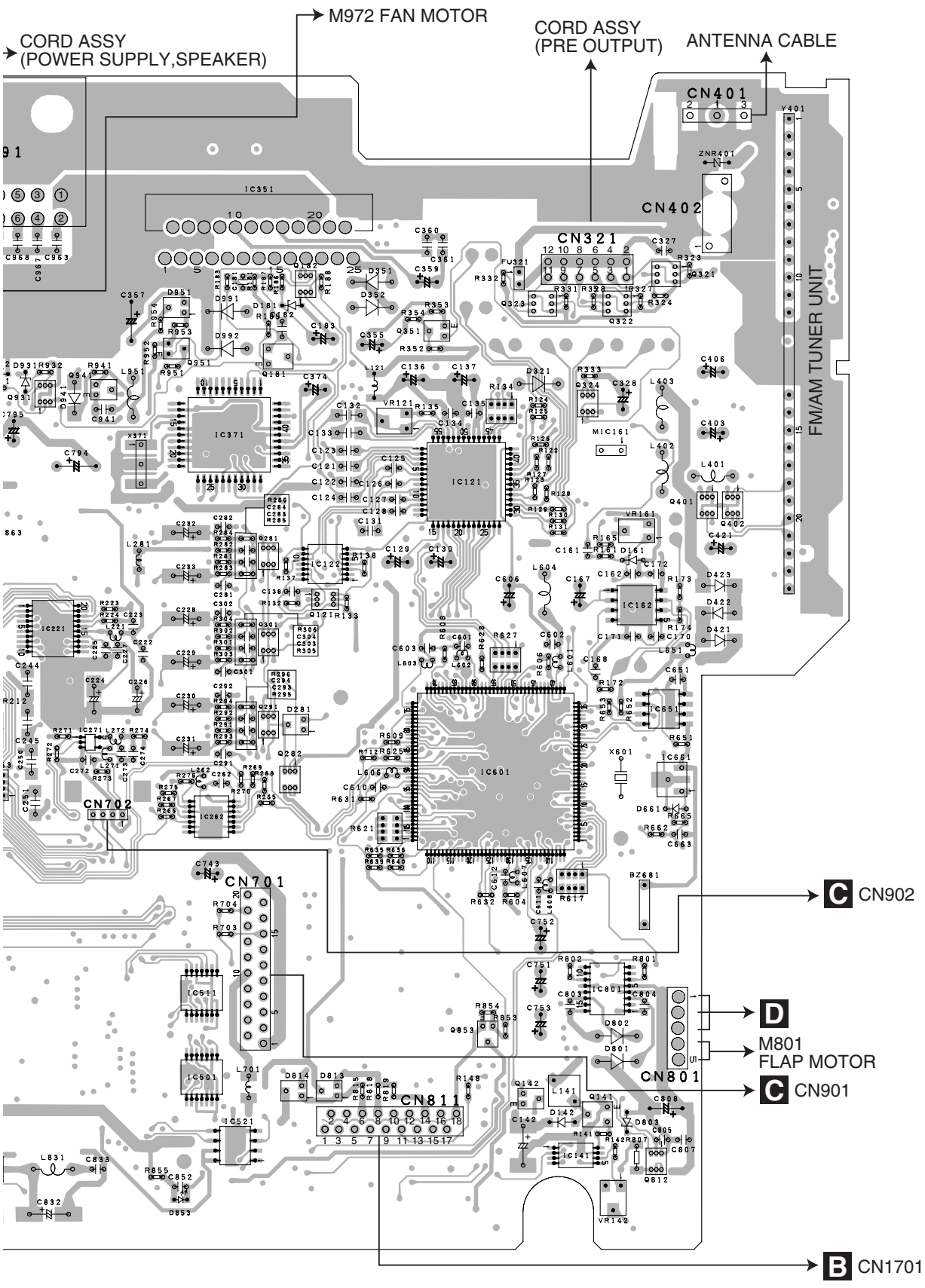


⚠ FU 321 (A,136,130) Fuse 3 A CEK1286

A TUNER AMP UNIT

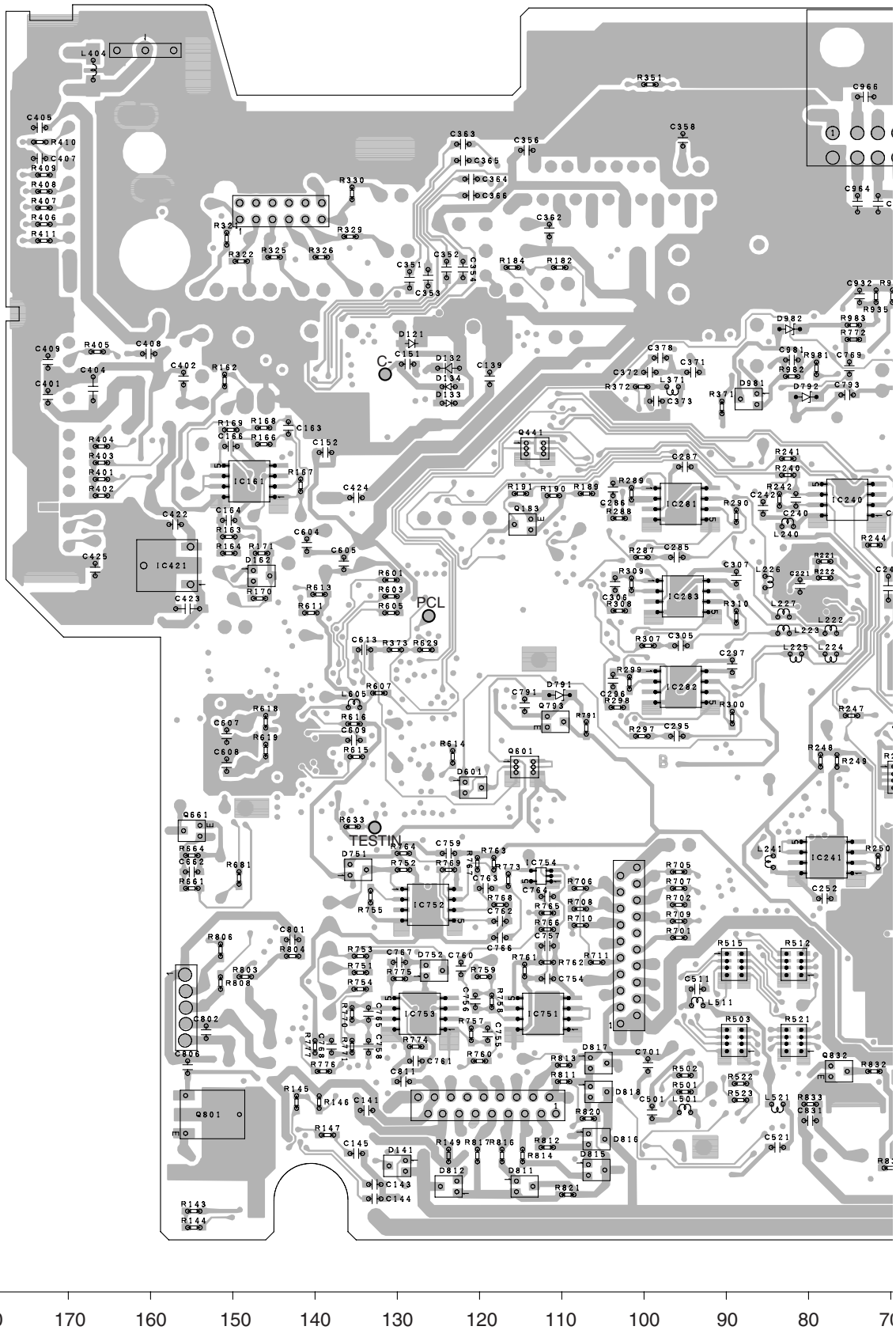


SIDE A

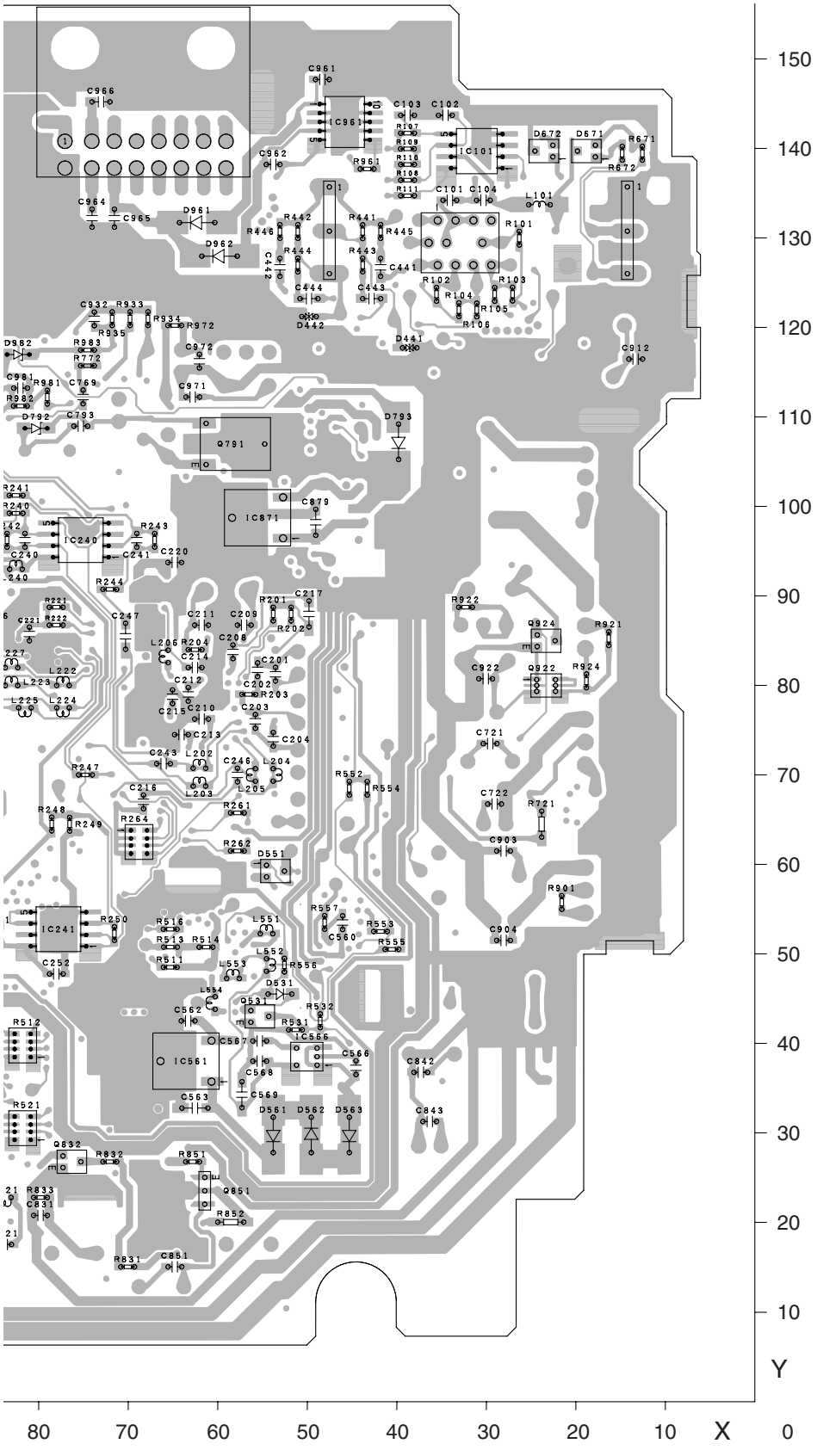

M972 FAN MOTOR
CORD ASSY
(POWER SUPPLY,SPEAKER)
CORD ASSY
(PRE OUTPUT)
ANTENNA CABLE
CN401
CN402
CN321
FM/AM TUNER UNIT
CN702
CN701
CN811
CN801
C CN902
D
M801
FLAP MOTOR
C CN901
B CN1701
FRONT

A

A TUNER AMP UNIT



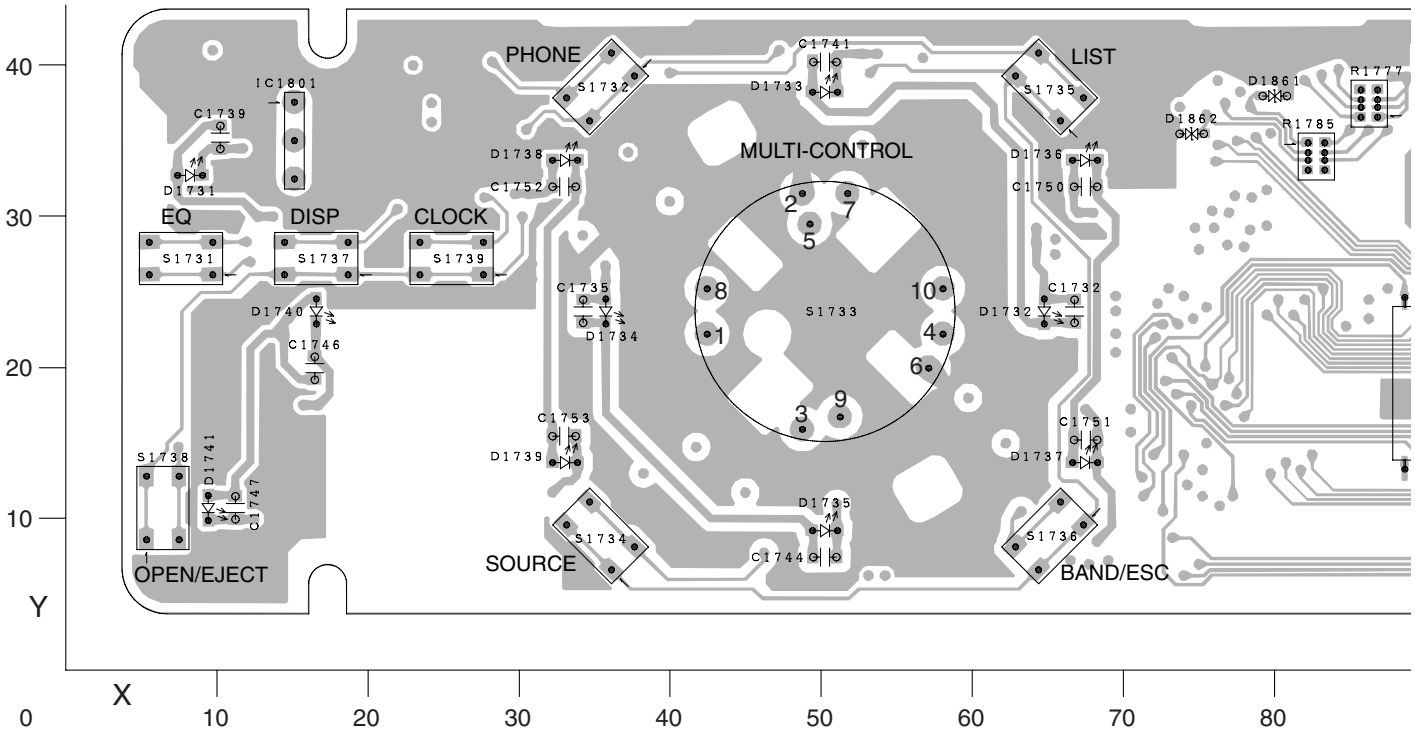
SIDE B


C961
C966
IC961
C103 C102
R107
R109
R110
R108
IC101
D672 D671
R671
R672
C962
R961
C964
C965
D961
C101 C104
L101
R442
R441
R446
R445
R101
D962
R444
R443
C441
C442
C444
C443
R102
R103
R104
R105
D442
D441
C932 R933
R934
R935
R972
C912
D982
R983
R772
C972
C981
R981
C769
C971
R982
D792
C793
D793
Q791
R241
R240
IC871
C879
IC240
R243
C241
C220
C240
R244
R221
R222
C247
C211
C209
R201
C217
R922
R202
C208
L206
R204
C214
C201
Q924
R921
C922
Q922
R924
C202
C212
R203
C215
C210
C203
C213
C204
C721
C243
L202
C246
L204
R552
R554
R247
C216
L205
L203
R261
C722
R721
R248
R249
R264
R262
D551
C903
R901
IC241
R250
R516
L551
R557
R553
C560
C904
R513
R514
R555
R511
L552
R556
C252
L553
L554
D531
R532
Q531
C562
R531
R512
IC556
C567
C566
IC561
C842
C568
C569
C563
D561
D562
D563
C843
R521
Q832
R832
R851
Q851
R833
C831
R852
R831
C851
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Y
80
70
60
50
40
30
20
10
X

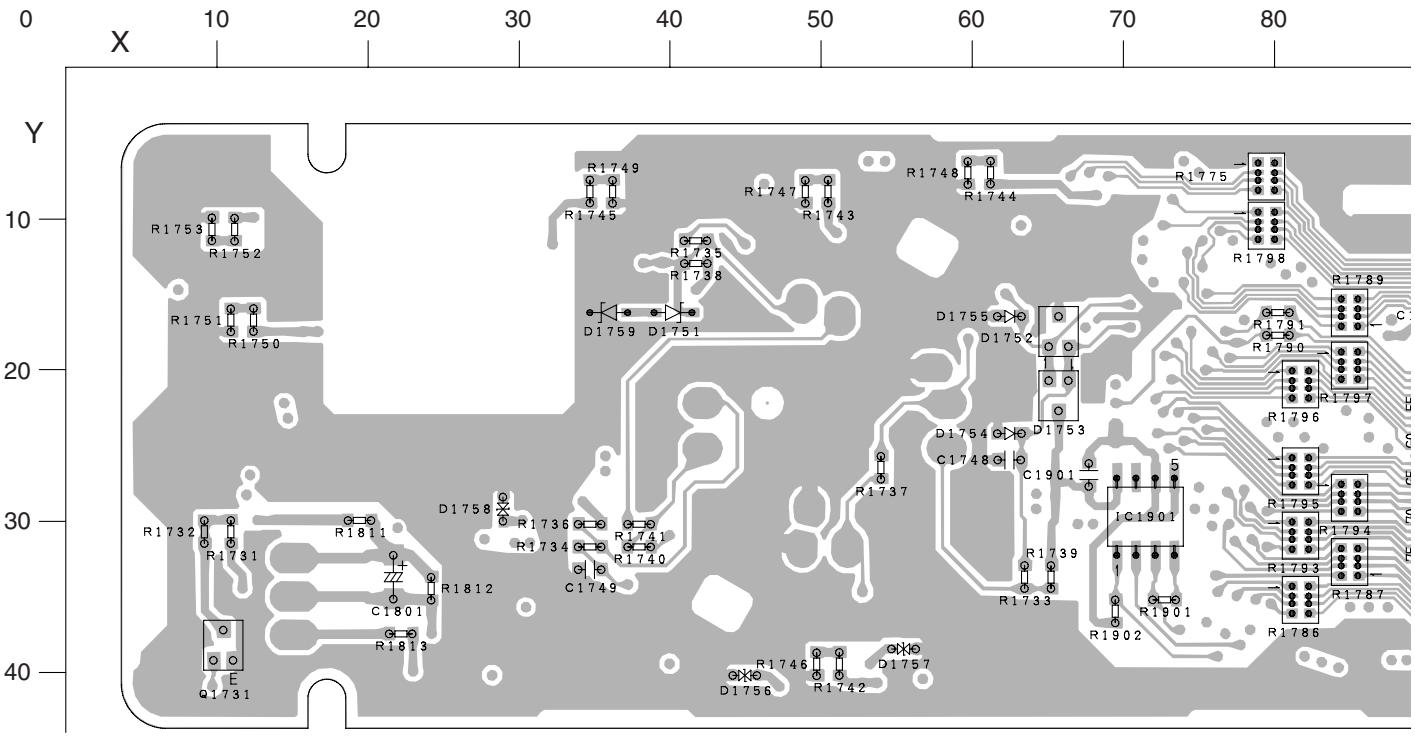
A

4.2 KEYBOARD UNIT

B KEYBOARD UNIT

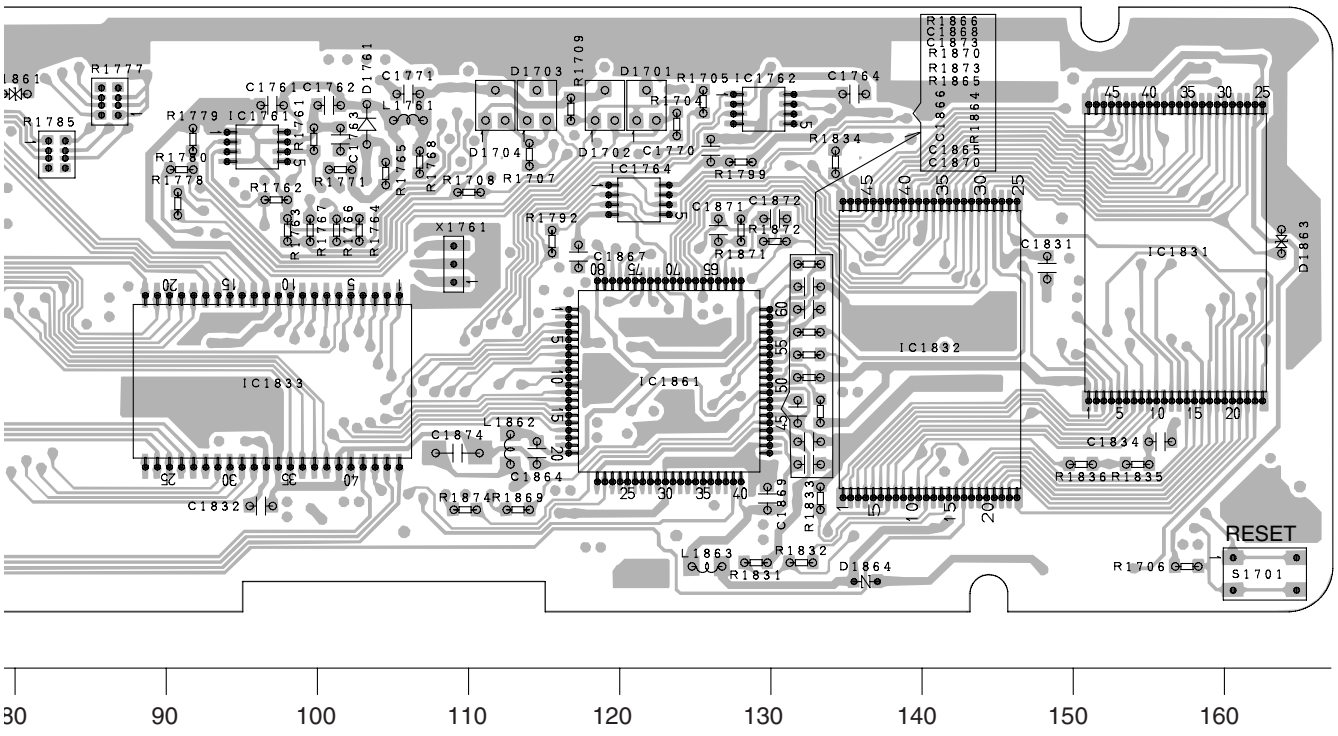


B KEYBOARD UNIT



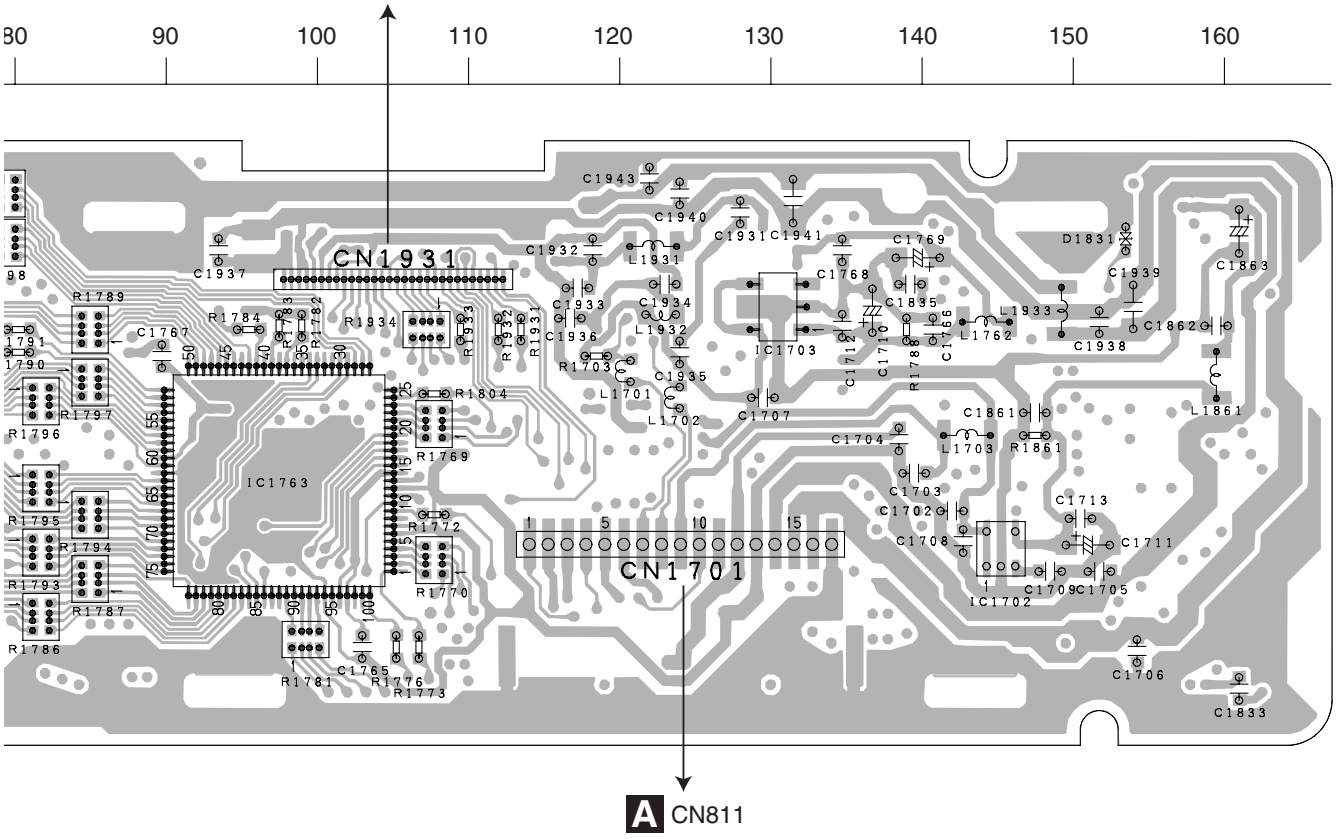
B

SIDE A



SIDE B

OEL MODULE

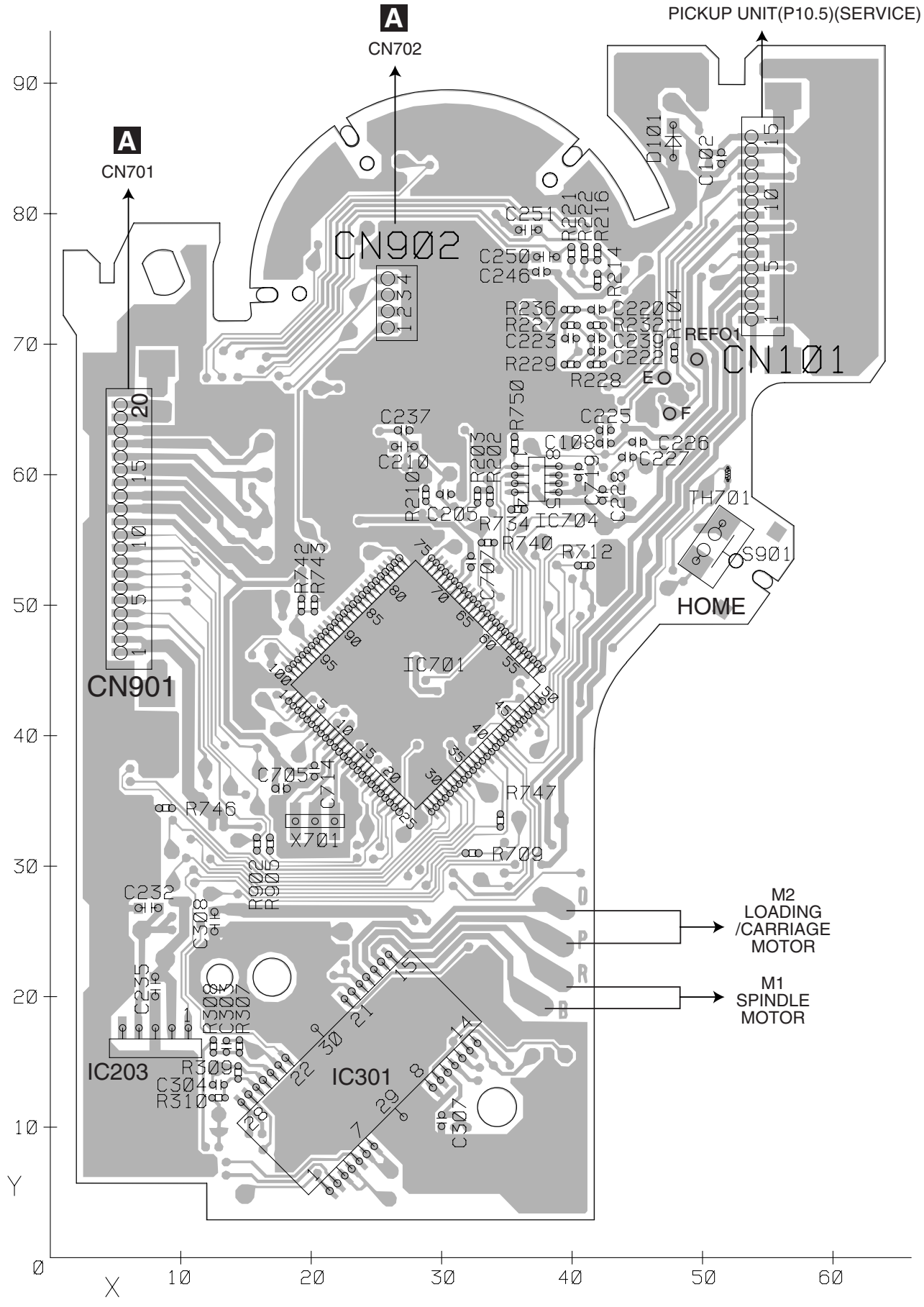


A CN811

4.3 CD CORE UNIT(COMP1D)

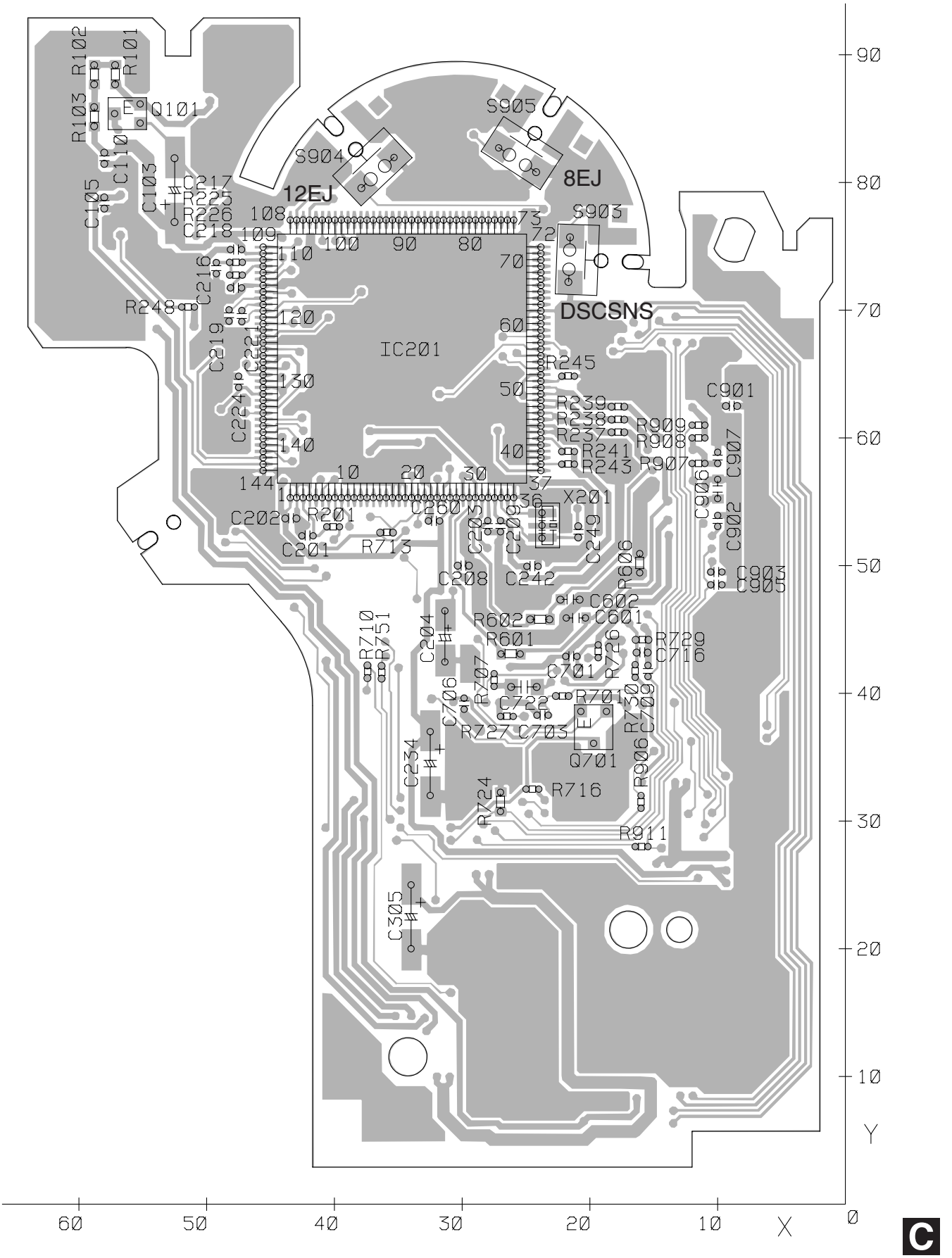
C CD CORE UNIT(COMP1D)

SIDE A



C CD CORE UNIT(COMP1D)

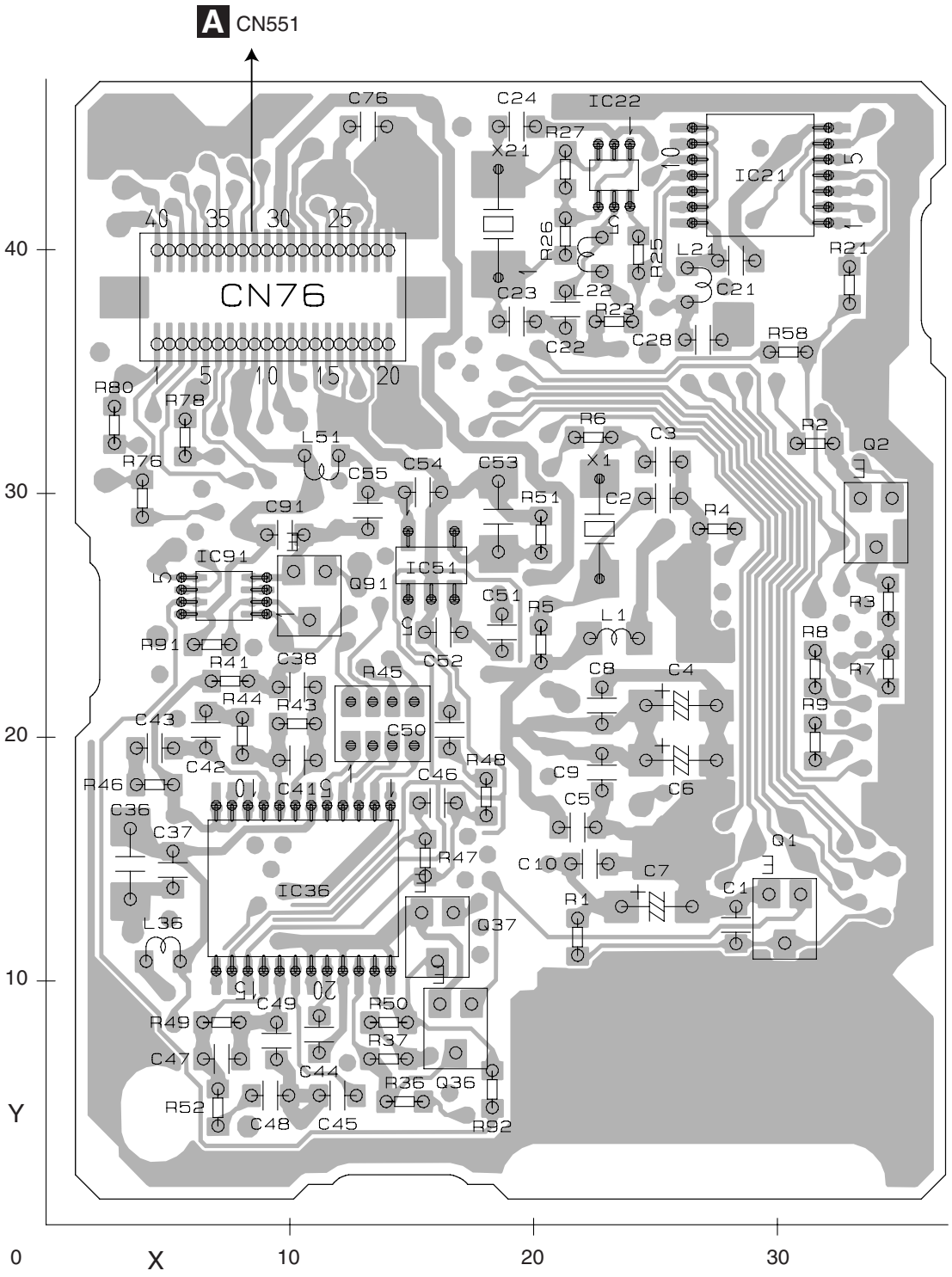
SIDE B



4.4 BLUETOOTH UNIT

E BLUETOOTH UNIT

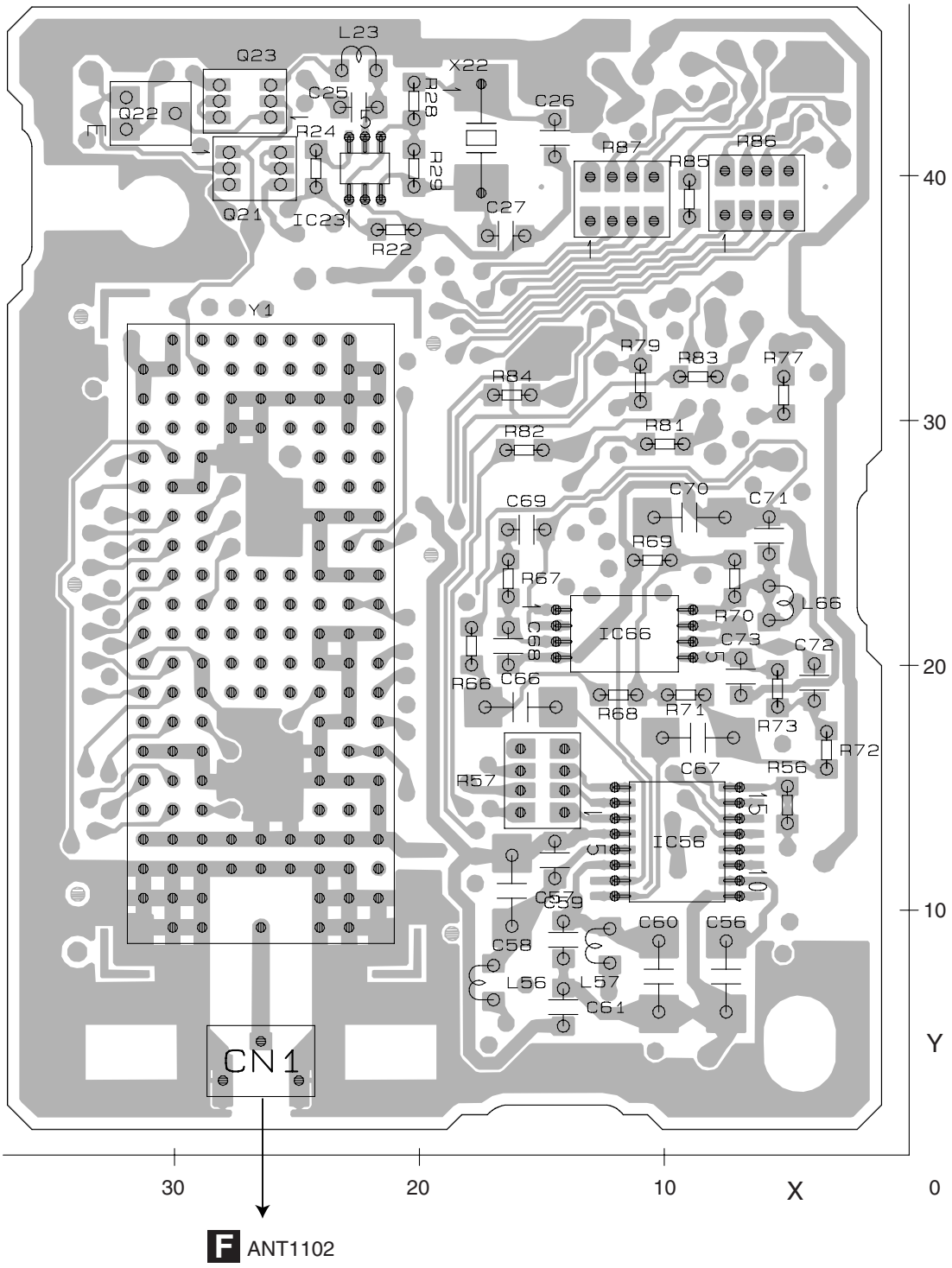
SIDE A



E

E BLUETOOTH UNIT

SIDE B

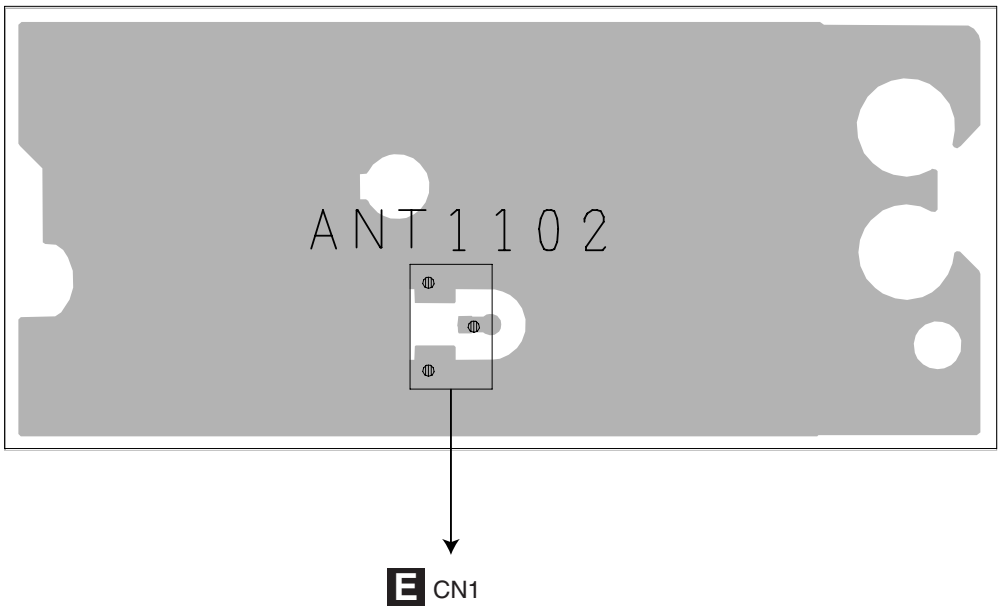


F ANT1102

4.5 ANTENNA UNIT

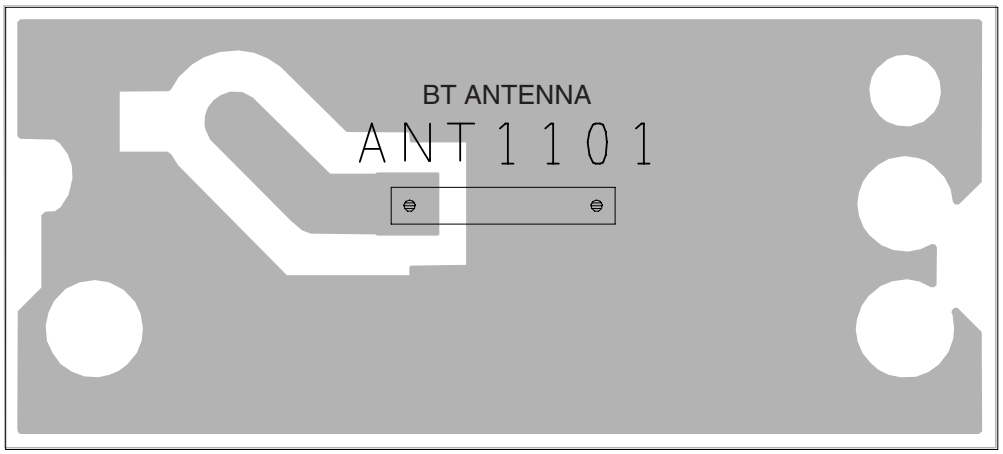
F ANTENNA UNIT

SIDE A



F ANTENNA UNIT

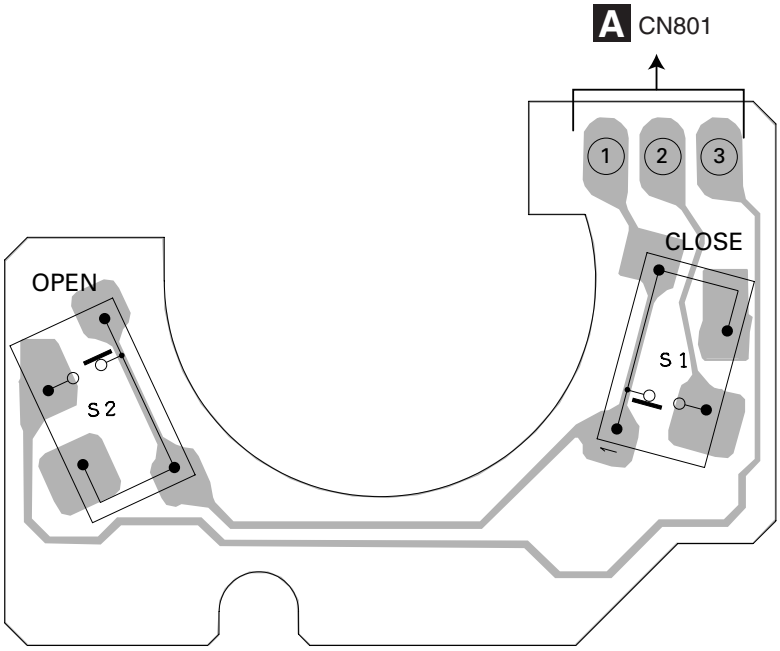
SIDE B



F

4.6 SWITCH UNIT

D SWITCH UNIT



5. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

  Chip Resistor

  RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Meaning of the figures and others in the parentheses in the parts list.*

  Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

  IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No. **Part No.**

Unit Number : CWN1771
Unit Name : Bluetooth Unit
Unit Number : CWN1436(DEH-P980BT/XN/UC)
Unit Name : Tuner Amp Unit
Unit Number : CWN1437(DEH-P9800BT/XN/UC)
Unit Name : Tuner Amp Unit
Unit Number : CWN1438(DEH-P9850BT/XN/ES)
Unit Name : Tuner Amp Unit
Unit Number :
Unit Name : Keyboard Unit
Unit Number : CWX3328
Unit Name : CD Core Unit(COMP1D)
Unit Number : CWS1389
Unit Name : Switch Unit

E

Unit Number : CWN1771
Unit Name : Bluetooth Unit

MISCELLANEOUS

IC 21	(A,29,43)	IC	TC74VHC02FTS1
IC 22	(A,23,43)	IC	TC7PAU04FU
IC 23	(B,22,40)	IC	TC7PAU04FU
IC 36	(A,11,14)	IC	AK2301A
IC 51	(A,16,27)	IC	AN6123MS
IC 56	(B,10,13)	IC	PCM1742KE
IC 66	(B,12,21)	IC	NJM4558V
Q 1	(A,30,13)	Transistor	DTC124EUA
Q 2	(A,34,29)	Transistor	DTC124EUA
Q 21	(B,27,40)	Transistor	UMD2N
Q 22	(B,31,43)	Transistor	DTC124EUA
Q 23	(B,27,43)	Transistor	UMD2N

Circuit Symbol and No.			Part No.
Q 36	(A,17,8)	Transistor	DTC124EUA
Q 37	(A,16,12)	Transistor	DTC124EUA
L 1	(A,23,24)	Inductor	CTF1394
L 21	(A,26,39)	Inductor	CTF1379
L 22	(A,23,40)	Inductor	CTF1379
L 23	(B,23,44)	Inductor	CTF1379
L 36	(A,5,11)	Inductor	LCYC2R2K1608
L 51	(A,11,32)	Inductor	CTF1379
L 56	(B,17,7)	Inductor	CTF1379
L 57	(B,12,9)	Inductor	CTF1379
X 21	(A,19,41)	Resonator 11.289 6 MHz	CSS1670
X 22	(B,18,42)	Resonator 12.288 MHz	CSS1698
Y 1	(B,27,21)	Compound Unit	CWX3340

RESISTORS

R 1	(A,22,12)	RS1/16S334J
R 2	(A,32,32)	RS1/16S103J
R 3	(A,35,26)	RS1/16S473J
R 4	(A,28,29)	RS1/16S103J
R 5	(A,20,24)	RS1/16S103J
R 6	(A,22,32)	RS1/16S0R0J
R 7	(A,35,23)	RS1/16S103J
R 8	(A,32,23)	RS1/16S101J
R 9	(A,32,20)	RS1/16S103J
R 21	(A,33,39)	RS1/16S101J
R 22	(B,21,38)	RS1/16S473J
R 23	(A,23,37)	RS1/16S473J
R 24	(B,24,40)	RS1/16S101J
R 25	(A,24,40)	RS1/16S101J
R 26	(A,21,41)	RS1/16S332J
R 27	(A,21,43)	RS1/16S105J
R 28	(B,20,43)	RS1/16S332J
R 29	(B,20,40)	RS1/16S105J
R 36	(A,15,5)	RS1/16S103J
R 37	(A,14,7)	RS1/16S104J
R 41	(A,8,22)	RS1/16S103J
R 43	(A,10,21)	RS1/16S393J
R 44	(A,8,20)	RS1/16S393J
R 45	(A,14,21)	RAB4C101J
R 46	(A,4,18)	RS1/16S103J
R 47	(A,16,15)	RS1/16S203J

Circuit Symbol and No.		Part No.
R 48	(A,18,18)	RS1/16S103J
R 49	(A,7,8)	RS1/16S203J
R 50	(A,14,8)	RS1/16S473J
R 51	(A,20,28)	RS1/16S105J
R 52	(A,7,5)	RS1/16S103J
R 57	(B,15,15)	RAB4C101J
R 58	(A,30,36)	RS1/16S821J
R 66	(B,18,21)	RS1/16S103J
R 67	(B,16,24)	RS1/16S103J
R 68	(B,12,19)	RS1/16S473J
R 69	(B,11,24)	RS1/16S103J
R 70	(B,7,24)	RS1/16S103J
R 71	(B,9,19)	RS1/16S473J
R 72	(B,3,17)	RS1/16S103J
R 73	(B,5,19)	RS1/16S103J
R 76	(A,4,30)	RS1/16S101J
R 77	(B,5,31)	RS1/16S101J
R 78	(A,6,32)	RS1/16S101J
R 79	(B,11,32)	RS1/16S0R0J
R 80	(A,3,33)	RS1/16S101J
R 81	(B,10,29)	RS1/16S101J
R 82	(B,16,29)	RS1/16S101J
R 83	(B,9,32)	RS1/16S101J
R 84	(B,16,31)	RS1/16S0R0J
R 85	(B,9,39)	RS1/16S101J
R 86	(B,6,39)	RAB4C101J
R 87	(B,12,39)	RAB4C101J

CAPACITORS

C 1	(A,28,12)	CKSRYB104K16
C 4	(A,26,21)	CSZS100M16
C 5	(A,22,16)	CKSRYB104K16
C 7	(A,25,13)	CSZS1R0M16
C 8	(A,23,21)	CKSRYB104K16
C 9	(A,23,19)	CKSRYB104K16
C 10	(A,22,15)	CCSRCH101J50
C 21	(A,28,40)	CKSRYB104K16
C 22	(A,21,38)	CKSRYB105K10
C 23	(A,19,37)	CCSRCH120J50
C 24	(A,19,45)	CCSRCH120J50
C 25	(B,23,43)	CKSRYB105K10
C 26	(B,15,42)	CCSRCH120J50
C 27	(B,17,38)	CCSRCH120J50
C 28	(A,27,36)	CKSRYB102K50
C 36	(A,3,15)	CKSYB106K6R3
C 37	(A,5,15)	CKSRYB104K16
C 38	(A,10,22)	CKSRYB105K10
C 41	(A,10,19)	CCSRCH101J50
C 42	(A,7,20)	CKSRYB105K10
C 43	(A,4,20)	CKSRYB105K10
C 44	(A,11,8)	CKSRYB334K10
C 45	(A,12,5)	CKSRYB105K10
C 46	(A,16,17)	CCSRCH101J50
C 47	(A,7,7)	CCSRCH101J50
C 48	(A,9,5)	CKSRYB105K10
C 49	(A,9,8)	CKSRYB105K10
C 50	(A,17,20)	CKSRYB105K10
C 51	(A,19,24)	CKSRYB334K10
C 52	(A,16,24)	CCSRCH331J50

Circuit Symbol and No.		Part No.
C 53	(A,19,29)	CKSYB106K6R3
C 54	(A,15,30)	CKSRYB105K10
C 55	(A,13,29)	CKSRYB104K16
C 56	(B,8,7)	CKSYB106K6R3
C 57	(B,15,12)	CKSRYB102K50
C 58	(B,16,11)	CKSYB106K6R3
C 59	(B,14,9)	CKSRYB102K50
C 60	(B,10,7)	CKSYB106K6R3
C 61	(B,14,6)	CKSRYB102K50
C 66	(B,16,18)	CKSYB475K16
C 67	(B,9,17)	CKSYB475K16
C 68	(B,16,21)	CCSRCH221J50
C 69	(B,16,26)	CCSRCH391J50
C 70	(B,9,26)	CKSYB106K6R3
C 71	(B,6,25)	CKSRYB105K10
C 72	(B,4,19)	CCSRCH391J50
C 73	(B,7,20)	CCSRCH221J50
C 76	(A,13,45)	CKSRYB102K50

A

Unit Number : CWN1436(DEH-P980BT/XN/UC)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(B,31,140) IC	HA12241FP
IC 121	(A,129,104) IC	PM9009A
IC 122	(A,111,94) IC	TC4066BFT
IC 201	(A,61,77) IC	AK7732VT
IC 221	(A,76,86) IC	PCM1606EG
IC 240	(B,75,96) IC	NJM4558MD
IC 241	(B,78,53) IC	NJM4558MD
IC 261	(A,58,64) IC	TC74VHCT08AFTS1
IC 262	(A,96,62) IC	TC74VHC08FTS1
IC 271	(A,81,71) IC	TC7SH08FUS1
IC 281	(B,96,96) IC	NJM4558MD
IC 282	(B,96,74) IC	NJM4558MD
IC 283	(B,95,85) IC	NJM4558MD
IC 351	(A,102,139) IC	PAL007B
IC 371	(A,99,110) IC	PM8003A
IC 421	(B,160,88) IC	NJM2885DL1-33
IC 431	(A,48,108) IC	TC4066BFT
IC 441	(A,46,122) IC	NJM4558MD
IC 501	(A,95,28) IC	TC74VHCT08AFTS1
IC 511	(A,95,39) IC	TC74VHC08FTS1
IC 521	(A,99,20) IC	S99-50084
IC 561	(B,65,38) IC	NJM2885DL1-33
IC 566	(B,50,39) IC	NJM2872F05
IC 601	(A,133,67) IC	PEG260A
IC 661	(A,155,66) IC	S-80835CNUA-B8U
IC 751	(B,112,34) IC	NJM4558MD
IC 752	(B,126,47) IC	NJM4151M
IC 753	(B,127,34) IC	NJM4558MD
IC 754	(B,113,51) IC	TC7S14FU
IC 801	(A,147,40) IC	BA6288FS
IC 861	(A,65,98) IC	NJM2872F05
IC 871	(B,57,99) IC	NJM2885DL1-33
Q 101	(A,22,121) Transistor	UMF23N
Q 121	(A,111,89) Transistor	UMD3N
Q 181	(A,105,120) Transistor	2SC3052-12

Circuit Symbol and No.		Part No.
Q 182	(A,108,130) Transistor	UMD3N
Q 183	(B,115,93) Transistor	2SC4081
Q 281	(A,104,95) Transistor	UMH3N
Q 282	(A,106,66) Transistor	UMD3N
Q 291	(A,104,73) Transistor	UMH3N
Q 301	(A,104,84) Transistor	UMH3N
Q 321	(A,154,131) Transistor	IMH23
Q 322	(A,148,127) Transistor	IMH23
Q 323	(A,139,127) Transistor	IMH23
Q 324	(A,144,114) Transistor	UMD3N
Q 351	(A,125,124) Transistor	DTC124EUA
Q 391	(A,39,58) Transistor	2SC4081
Q 431	(A,46,114) Transistor	UMD3N
Q 531	(B,55,43) Transistor	DTC314TU
Q 601	(B,115,64) Transistor	UMD3N
Q 661	(B,155,56) Transistor	2SC4081
Q 721	(A,18,74) Transistor	2SD2396
Q 722	(A,36,72) Transistor	UMD3N
Q 791	(B,57,107) Transistor	2SD1760F5
Q 792	(A,57,103) Transistor	UMD3N
Q 793	(B,111,69) Transistor	2SC4081
Q 794	(A,39,96) Transistor	2SC4081
Q 795	(A,39,90) Transistor	UMD3N
Q 801	(B,151,22) Transistor	2SD1760F5
Q 812	(A,153,18) Transistor	UMD3N
Q 831	(A,68,17) Transistor	2SB710A
Q 832	(B,76,27) Transistor	DTC114EU
Q 841	(A,34,19) Transistor	2SD1760F5
Q 842	(A,38,36) Transistor	UMD3N
Q 851	(B,63,24) Transistor	2SD1767
Q 852	(A,66,9) Transistor	UMD3N
Q 853	(A,132,34) Transistor	2SC4081
Q 901	(A,18,57) Transistor	2SD2396
Q 902	(A,34,50) Transistor	UMD3N
Q 911	(A,18,103) Transistor	2SD2396
Q 912	(A,22,118) Transistor	UMD3N
Q 921	(A,18,87) Transistor	2SD2396
Q 922	(B,23,80) Transistor	UMD3N
Q 931	(A,75,116) Transistor	UMX1N
Q 941	(A,83,116) Transistor	DTC114EU
Q 951	(A,92,121) Transistor	2SA1576
Q 971	(A,51,115) Transistor	UMD3N
Q 972	(A,57,117) Transistor	2SD1859
D 121	(B,128,115) Diode	RB520S-30
D 132	(B,124,112) Diode	1SS355
D 133	(B,124,108) Diode	RB521S-30
D 134	(B,124,110) Diode	RB521S-30
D 181	(A,107,127) Diode	HZU3R9(B1)
D 281	(A,107,73) Diode	DAN202U
D 321	(A,138,117) Diode	1SS133
D 351	(A,117,130) Diode	MPG06G-6415G50
D 352	(A,117,127) Diode	MPG06G-6415G50
D 391	(A,44,69) Diode	DAN202U
D 392	(A,43,72) Diode	HZU9L(A2)
D 421	(A,161,84) Diode	1SR154-400
D 422	(A,161,88) Diode	1SR154-400
D 423	(A,161,91) Diode	1SR154-400
D 431	(A,32,125) Diode	RSB6R8S
D 441	(B,39,118) Diode	RSB6R8S
D 442	(B,50,121) Diode	RSB6R8S

Circuit Symbol and No.		Part No.
D 531	(B,53,46) Diode	1SS355
D 551	(B,54,59) Diode	DAN202U
D 601	(B,121,61) Diode	DAN202U
D 671	(B,19,140) Diode	DAN202U
D 672	(B,24,140) Diode	DAP202U
D 721	(A,30,72) Diode	HZS9L(A2)
D 751	(B,135,51) Diode Network	DA204U
D 752	(B,126,39) Diode Network	DA204U
D 791	(B,110,73) Diode	HZU6L(B1)
D 792	(B,80,109) Diode	HZU7L(A1)
D 793	(B,40,107) Diode	1SR154-400
D 794	(A,42,90) Diode	HZU9L(B2)
D 801	(A,148,30) Diode	1SS133
D 802	(A,148,34) Diode	1SS133
D 803	(A,149,23) Diode	HZU7L(B2)
D 811	(B,115,13) Diode	DAN202U
D 812	(B,124,13) Diode	DAP202U
D 813	(A,111,27) Diode	DAN202U
D 814	(A,107,27) Diode	DAP202U
D 815	(B,106,15) Diode	DAN202U
D 816	(B,106,19) Diode	DAP202U
D 817	(B,106,28) Diode	DAN202U
D 818	(B,106,24) Diode	DAP202U
D 841	(A,36,39) Diode	HZS9L(C2)
D 851	(A,66,13) Diode	HZS11L(A1)
D 853	(A,92,13) LED	SML412BC5T(MN)
D 901	(A,35,59) Diode	MPG06G-6415G50
D 902	(A,29,59) Diode	HZS6L(B1)
D 911	(A,13,115) Diode	HZS9L(B2)
D 921	(A,30,83) Diode	HZS9L(B2)
D 931	(A,73,117) Diode	HZU7L(A1)
D 932	(A,69,118) Diode	HZU7L(C3)
D 941	(A,79,115) Diode	1SR154-400
D 951	(A,92,127) Diode	DAN202U
D 971	(A,57,114) Diode	HZS11L(B2)
D 981	(B,87,109) Diode Network	DA204U
D 982	(B,82,117) Diode	HZU7L(C2)
D 991	(A,98,126) Diode	MPG06G-6415G50
D 992	(A,98,121) Diode	MPG06G-6415G50
D 993	(A,61,103) Diode	DAN202U
ZNR401	(A,161,145)Surge Protector	RCCA-201Q31UA-PI
L 101	(B,24,134) Inductor	LCTAW2R2J2520
L 121	(A,117,117)	ATH1176
L 201	(A,55,85) Inductor	CTF1379
L 206	(B,66,83) Inductor	CTF1389
L 208	(A,63,68) Inductor	CTF1389
L 221	(A,84,85) Inductor	CTF1379
L 241	(B,84,52) Inductor	CTF1389
L 261	(A,56,70) Inductor	CTF1379
L 262	(A,95,66) Inductor	CTF1379
L 271	(A,83,70) Inductor	CTF1389
L 272	(A,84,72) Inductor	CTF1379
L 371	(B,97,110) Inductor	CTF1379
L 401	(A,160,105) Inductor	LAU1R0K
L 402	(A,154,106) Ferri-Inductor	LAU100K
L 403	(A,154,114) Inductor	LAU1R0K
L 404	(B,167,149) Chip Coil	LCTAW4R7J2520
L 501	(B,95,22) Inductor	CTF1379
L 511	(B,94,35) Inductor	CTF1379
L 521	(B,84,23) Inductor	CTF1379

Circuit Symbol and No.		Part No.
L 554	(B,60,45) Inductor	CTF1389
L 604	(A,139,90) Ferri-Inductor	LAU100K
L 701	(A,101,27) Inductor	LCTAW2R2J3225
L 831	(A,76,17) Ferri-Inductor	LAU100K
L 841	(A,57,18) Inductor	LAU2R2K
L 872	(A,41,85) Inductor	CTF1617
L 951	(A,86,115) Inductor	LAU2R2K
X 201	(A,59,91)Crystal Resonator 16.934 4 MHz	CSS1052
X 371	(A,87,107)Ceramic Resonator 4.096 MHz	CSS1429
X 601	(A,149,67)Cristal Resonator 20 MHz	VSS1167
VR121	(A,120,112)Semi-fixed 15 kΩ(B)	CCP1397
⚠FU321	(A,136,130) Fuse 3 A	CEK1286
BZ681	(A,152,50) Buzzer	CPV1062
M 972	Fan Motor	CXM1288
	FM/AM Tuner Unit	CWE1952

RESISTORS

R 101	(B,26,130)	RS1/16S181J
R 102	(B,36,124)	RS1/16S181J
R 103	(B,27,124)	RS1/16S223J
R 104	(B,33,122)	RS1/16S223J
R 105	(B,29,124)	RS1/16S102J
R 106	(B,31,122)	RS1/16S102J
R 107	(B,39,142)	RS1/16S101J
R 108	(B,39,137)	RS1/16S101J
R 109	(B,39,140)	RS1/16S150J
R 110	(B,39,138)	RS1/16S470J
R 111	(B,39,135)	RS1/16S102J
R 112	(A,26,124)	RS1/16S222J
R 113	(A,23,124)	RS1/16S332J
R 114	(A,20,124)	RS1/16S562J
R 122	(A,139,107)	RS1/16S0R0J
R 123	(A,138,103)	RS1/16S0R0J
R 124	(A,138,114)	RS1/16S0R0J
R 125	(A,138,113)	RS1/16S0R0J
R 126	(A,138,109)	RS1/16S0R0J
R 127	(A,138,107)	RS1/16S0R0J
R 128	(A,139,103)	RS1/16S0R0J
R 129	(A,141,101)	RS1/16S0R0J
R 130	(A,141,99)	RS1/16S0R0J
R 131	(A,141,98)	RS1/16S0R0J
R 132	(A,107,89)	RS1/16S103J
R 133	(A,114,89)	RS1/16S103J
R 134	(A,133,113)	RAB4C102J
R 135	(A,124,113)	RS1/16S103J
R 181	(A,102,130)	RS1/16S104J
R 182	(B,110,125)	RS1/16S683J
R 183	(A,98,130)	RS1/16S153J
R 184	(B,116,125)	RS1/16S682J
R 185	(A,104,124)	RS1/16S152J
R 186	(A,104,130)	RS1/16S222J
R 187	(A,105,130)	RS1/16S561J
R 188	(A,110,130)	RS1/16S473J
R 189	(B,107,97)	RS1/16S103J
R 190	(B,111,97)	RS1/16S223J
R 191	(B,115,97)	RS1/16S104J
R 201	(B,54,88)	RS1/16S104J
R 202	(B,52,88)	RS1/16S104J
R 203	(B,57,79)	RS1/16S153J
R 204	(B,63,84)	RS1/16S222J

Circuit Symbol and No.		Part No.
R 205	(A,59,68)	RS1/16S681J
R 206	(A,62,87)	RS1/16S101J
R 207	(A,61,68)	RS1/16S681J
R 208	(A,67,86)	RAB4C101J
R 212	(A,69,76)	RS1/16S101J
R 213	(A,68,71)	RS1/16S101J
R 214	(A,67,71)	RS1/16S101J
R 221	(B,78,89)	RS1/16S103J
R 222	(B,78,87)	RS1/16S103J
R 240	(B,83,99)	RS1/16S223J
R 241	(B,83,101)	RS1/16S223J
R 242	(B,84,96)	RS1/16S153J
R 243	(B,67,96)	RS1/16S153J
R 244	(B,72,91)	RS1/16S101J
R 247	(B,75,70)	RS1/16S101J
R 248	(B,79,65)	RS1/16S473J
R 249	(B,77,65)	RS1/16S473J
R 261	(B,58,66)	RS1/16S681J
R 262	(B,58,62)	RS1/16S681J
R 263	(A,69,66)	RAB4C123J
R 264	(B,69,63)	RAB4C223J
R 265	(A,103,63)	RS1/16S681J
R 266	(A,91,62)	RS1/16S681J
R 267	(A,91,63)	RS1/16S681J
R 268	(A,103,66)	RS1/16S681J
R 269	(A,102,66)	RS1/16S681J
R 270	(A,100,66)	RS1/16S681J
R 271	(A,77,72)	RS1/16S0R0J
R 273	(A,82,67)	RS1/16S0R0J
R 274	(A,87,72)	RS1/16S0R0J
R 275	(A,91,65)	RS1/16S681J
R 276	(A,93,66)	RS1/16S681J
R 281	(A,98,94)	RS1/16S473J
R 282	(A,98,96)	RS1/16S473J
R 283	(A,98,93)	RS1/16S682J
R 284	(A,98,97)	RS1/16S682J
R 285	(A,101,93)	RS1/16S682J
R 286	(A,101,97)	RS1/16S682J
R 287	(B,100,89)	RS1/16S102J
R 288	(B,103,94)	RS1/16S102J
R 289	(B,102,97)	RS1/16S101J
R 290	(B,89,94)	RS1/16S101J
R 291	(A,98,73)	RS1/16S473J
R 292	(A,98,74)	RS1/16S473J
R 293	(A,98,71)	RS1/16S682J
R 294	(A,98,76)	RS1/16S682J
R 295	(A,101,71)	RS1/16S682J
R 296	(A,101,76)	RS1/16S682J
R 297	(B,100,68)	RS1/16S102J
R 298	(B,103,71)	RS1/16S102J
R 299	(B,102,74)	RS1/16S101J
R 300	(B,89,70)	RS1/16S101J
R 301	(A,98,83)	RS1/16S473J
R 302	(A,98,85)	RS1/16S473J
R 303	(A,98,82)	RS1/16S682J
R 304	(A,98,86)	RS1/16S682J
R 305	(A,101,82)	RS1/16S682J
R 306	(A,101,86)	RS1/16S682J
R 307	(B,100,79)	RS1/16S102J
R 308	(B,103,83)	RS1/16S102J

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
R 309	(B,102,86)	RS1/16S101J	R 552	(B,45,69)	RS1/16S0R0J
R 310	(B,89,82)	RS1/16S101J	R 554	(B,43,69)	RS1/16S102J
R 321	(B,151,128)	RS1/16S470J	R 555	(B,41,51)	RS1/16S220J
R 322	(B,149,125)	RS1/16S470J	R 556	(B,53,49)	RS1/16S102J
R 323	(A,157,131)	RS1/16S223J	R 557	(B,48,54)	RS1/16S0R0J
R 324	(A,154,128)	RS1/16S223J	R 601	(B,131,87)	RS1/16S104J
R 325	(B,145,126)	RS1/16S470J	R 603	(B,131,85)	RS1/16S104J
R 326	(B,139,126)	RS1/16S470J	R 604	(A,135,52)	RS1/16S103J
R 327	(A,151,127)	RS1/16S223J	R 605	(B,131,83)	RS1/16S104J
R 328	(A,145,127)	RS1/16S223J	R 606	(A,139,81)	RS1/16S102J
R 329	(B,136,128)	RS1/16S470J	R 607	(B,132,73)	RS1/16S104J
R 330	(B,136,134)	RS1/16S470J	R 608	(A,126,82)	RS1/16S104J
R 331	(A,142,127)	RS1/16S223J	R 609	(A,119,71)	RS1/16S102J
R 332	(A,134,130)	RS1/16S223J	R 611	(B,141,83)	RS1/16S472J
R 333	(A,145,118)	RS1/16S102J	R 613	(B,140,85)	RS1/16S472J
R 351	(B,99,147)	RS1/16S103J	R 615	(B,135,65)	RS1/16S104J
R 352	(A,125,121)	RS1/16S103J	R 616	(B,135,69)	RS1/16S104J
R 353	(A,125,126)	RS1/16S103J	R 617	(A,142,53)	RAB4C104J
R 354	(A,122,125)	RS1/16S331J	R 619	(B,146,66)	RS1/16S0R0J
R 371	(B,91,108)	RS1/16S0R0J	R 621	(A,119,60)	RAB4C104J
R 372	(B,100,110)	RS1/16S473J	R 625	(A,119,69)	RS1/16S104J
R 373	(B,130,78)	RS1/16S104J	R 627	(A,134,82)	RAB4C681J
R 391	(A,39,54)	RS1/16S103J	R 628	(A,131,81)	RS1/16S681J
R 392	(A,40,65)	RS1/16S223J	R 629	(B,127,78)	RS1/16S681J
R 393	(A,38,65)	RS1/16S103J	R 631	(A,116,64)	RS1/16S104J
R 394	(A,37,65)	RS1/16S473J	R 632	(A,131,52)	RS1/16S104J
R 405	(B,167,114)	RS1/16S681J	R 633	(B,136,57)	RS1/16S104J
R 406	(B,173,130)	RS1/16S681J	R 635	(A,117,57)	RS1/16S104J
R 407	(B,173,132)	RS1/16S681J	R 640	(A,120,55)	RS1/16S0R0J
R 408	(B,173,134)	RS1/16S681J	R 652	(A,149,76)	RS1/16S104J
R 409	(B,173,136)	RS1/16S681J	R 661	(B,155,49)	RS1/16S222J
R 410	(B,174,140)	RS1/16S681J	R 662	(A,153,59)	RS1/16S102J
R 431	(A,48,103)	RS1/16S103J	R 664	(B,155,53)	RS1/16S473J
R 432	(A,48,105)	RS1/16S103J	R 665	(A,156,61)	RS1/16S183J
R 441	(B,44,131)	RS1/16S223J	R 671	(B,13,140)	RS1/16S102J
R 442	(B,51,131)	RS1/16S223J	R 672	(B,15,140)	RS1/16S102J
R 443	(B,44,127)	RS1/16S103J	R 681	(B,149,50)	RS1/16S102J
R 444	(B,51,127)	RS1/16S103J	R 701	(B,96,43)	RS1/16S682J
R 445	(B,42,131)	RS1/16S103J	R 702	(B,96,47)	RS1/16S682J
R 446	(B,53,131)	RS1/16S103J	R 703	(A,98,47)	RS1/16S682J
R 447	(A,40,121)	RS1/16S103J	R 704	(A,98,50)	RS1/16S682J
R 448	(A,40,119)	RS1/16S103J	R 705	(B,96,51)	RS1/16S221J
R 449	(A,39,123)	RS1/16S103J	R 706	(B,108,49)	RS1/16S221J
R 450	(A,52,122)	RS1/16S103J	R 707	(B,96,49)	RS1/16S221J
R 451	(A,45,116)	RS1/16S104J	R 708	(B,108,47)	RS1/16S221J
R 452	(A,47,117)	RS1/16S104J	R 709	(B,96,45)	RS1/16S221J
R 501	(B,95,24)	RS1/16S681J	R 710	(B,108,45)	RS1/16S681J
R 502	(B,95,26)	RS1/16S681J	R 711	(B,106,40)	RS1/16S473J
R 503	(B,89,31)	RAB4C681J	R 712	(A,116,69)	RS1/16S104J
R 511	(B,65,49)	RS1/16S182J	R 721	(B,24,65)	RS1/4SA391J
R 512	(B,82,40)	RAB4C681J	R 751	(B,135,39)	RS1/16S393J
R 513	(B,65,51)	RS1/16S332J	R 752	(B,129,51)	RS1/16S104J
R 514	(B,61,51)	RS1/16S332J	R 753	(B,135,41)	RS1/16S472J
R 515	(B,89,40)	RAB4C681J	R 754	(B,135,37)	RS1/16S471J
R 516	(B,65,53)	RS1/16S182J	R 755	(B,133,48)	RS1/16S273J
R 521	(B,82,31)	RAB4C101J	R 757	(B,121,31)	RS1/16S104J
R 522	(B,88,25)	RS1/16S101J	R 758	(B,119,35)	RS1/16S222J
R 523	(B,88,23)	RS1/16S101J	R 759	(B,120,38)	RS1/16S471J
R 531	(B,51,42)	RS1/16S223J	R 760	(B,120,28)	RS1/16S471J
R 532	(B,49,43)	RS1/16S102J	R 761	(B,115,39)	RS1/16S473J

Circuit Symbol and No.		Part No.
R 762	(B,112,40)	RS1/16S473J
R 763	(B,118,52)	RS1/16S103J
R 764	(B,129,53)	RS1/16S103J
R 765	(B,112,46)	RS1/16S473J
R 766	(B,112,44)	RS1/16S473J
R 767	(B,120,52)	RS1/16S472J
R 768	(B,118,47)	RS1/16S103J
R 769	(B,124,51)	RS1/16S682J
R 770	(B,136,34)	RS1/16S333J
R 771	(B,136,30)	RS1/16S332J
R 773	(B,117,50)	RS1/16S0R0J
R 774	(B,128,30)	RS1/16S473J
R 775	(B,130,38)	RS1/16S473J
R 776	(B,139,27)	RS1/16S473J
R 777	(B,140,30)	RS1/16S473J
R 791	(B,107,69)	RS1/16S122J
R 792	(A,54,105)	RS1/16S821J
R 793	(A,39,94)	RS1/16S152J
R 801	(A,152,42)	RS1/16S102J
R 802	(A,142,42)	RS1/16S102J
R 803	(B,149,38)	RS1/16S103J
R 804	(B,143,41)	RS1/16S563J
R 806	(B,152,42)	RS1/16S102J
R 807	(A,151,18)	RS1/4SA102J
R 808	(B,152,38)	RS1/16S102J
R 811	(B,110,26)	RS1/16S222J
R 812	(B,112,18)	RS1/16S222J
R 813	(B,110,28)	RS1/16S222J
R 814	(B,115,17)	RS1/16S222J
R 815	(A,116,27)	RS1/16S222J
R 816	(B,117,17)	RS1/16S222J
R 817	(B,120,17)	RS1/16S222J
R 818	(A,118,27)	RS1/16S222J
R 819	(A,120,27)	RS1/16S104J
R 820	(B,107,21)	RS1/16S223J
R 821	(B,109,12)	RS1/16S473J
R 831	(B,70,15)	RS1/16S472J
R 832	(B,72,27)	RS1/16S821J
R 833	(B,80,23)	RS1/16S222J
R 841	(A,39,24)	RS1/16S1R0J
R 842	(A,37,33)	RS1/4SA271J
R 851	(B,63,27)	RS1/16S1R0J
R 852	(B,59,20)	RS1/4SA391J
R 853	(A,134,34)	RS1/16S562J
R 854	(A,132,37)	RS1/16S103J
R 855	(A,89,16)	RS1/16S151J
R 901	(B,22,56)	RS1/16S223J
R 902	(A,36,50)	RS1/16S272J
R 911	(A,22,116)	RS1/16S821J
R 921	(B,16,85)	RS1/16S821J
R 931	(A,69,116)	RS1/16S104J
R 932	(A,75,118)	RS1/16S103J
R 933	(B,70,121)	RS1/16S473J
R 934	(B,68,121)	RS1/16S473J
R 935	(B,72,121)	RS1/16S472J
R 941	(A,82,118)	RS1/16S103J
R 951	(A,91,119)	RS1/16S102J
R 952	(A,89,121)	RS1/16S472J
R 953	(A,92,124)	RS1/16S472J
R 954	(A,90,124)	RS1/16S153J

Circuit Symbol and No.		Part No.
R 971	(A,52,119)	RS1/16S391J
R 972	(B,65,120)	RS1/16S1R0J
R 981	(B,79,112)	RS1/16S102J
R 982	(B,82,111)	RS1/16S153J
R 983	(B,75,118)	RS1/16S102J

CAPACITORS

C 101	(B,34,134)	CKSRYB104K16
C 102	(B,35,144)	CKSRYB102K50
C 103	(B,39,144)	CKSRYB102K50
C 121	(A,114,106)	CKSQYB225K10
C 122	(A,114,104)	CKSQYB225K10
C 123	(A,114,108)	CKSQYB225K10
C 124	(A,114,102)	CKSQYB225K10
C 125	(A,120,106)	CKSRYB105K10
C 126	(A,120,104)	CKSRYB105K10
C 127	(A,120,102)	CKSRYB104K16
C 128	(A,120,101)	CKSRYB104K16
C 129	(A,120,94)	CEJQ4R7M35
C 130	(A,126,94)	CEJQ4R7M35
C 131	(A,117,98)	CKSQYB225K10
C 132	(A,114,113)	CKSYB475K10
C 133	(A,114,111)	CKSYB475K10
C 134	(A,127,113)	CKSRYB105K10
C 135	(A,130,113)	CKSRYB105K10
C 136	(A,122,117)	CEJQ470M10
C 137	(A,129,117)	CEJQ470M10
C 138	(A,107,90)	CKSRYB104K16
C 139	(B,119,111)	CKSRYB105K10
C 151	(B,129,113)	CKSRYB105K10
C 181	(A,100,130)	CCSRCH681J50
C 182	(A,105,124)	CKSQYB225K10
C 183	(A,111,123)	CEJQ101M6R3
C 201	(B,54,81)	CKSRYB104K16
C 202	(B,56,82)	CKSRYB682K50
C 203	(B,56,76)	CKSRYB104K16
C 204	(B,54,74)	CKSRYB104K16
C 205	(A,51,83)	CEJQ100M16
C 206	(A,51,77)	CEJQ100M16
C 207	(A,51,72)	CEJQ100M16
C 208	(B,58,84)	CKSRYB104K16
C 209	(B,57,87)	CCSRCH8R0D50
C 210	(B,62,76)	CKSRYB104K16
C 211	(B,62,87)	CCSRCH8R0D50
C 212	(B,63,79)	CKSRYB104K16
C 213	(B,64,75)	CKSRYB104K16
C 214	(B,63,82)	CCSRCH680J50
C 215	(B,65,79)	CKSRYB104K16
C 216	(B,68,67)	CCSRCH680J50
C 217	(B,50,88)	CKSYB106K6R3
C 220	(B,65,94)	CKSRYB103K50
C 221	(B,81,86)	CCSRCH101J50
C 224	(A,81,77)	CEVW100M10
C 225	(A,83,83)	CKSRYB104K16
C 226	(A,87,77)	CSZS100M16
C 227	(A,84,83)	CKSRYB104K16
C 228	(A,93,87)	CEVW100M10
C 229	(A,93,81)	CEVW100M10
C 230	(A,93,76)	CEVW100M10

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
C 231	(A,93,70)	CEVW100M10	C 366	(B,121,133)	CKSRYB474K10
C 232	(A,93,98)	CEVW100M10	C 371	(B,94,112)	CKSRYB104K16
C 233	(A,93,92)	CEVW100M10	C 372	(B,99,112)	CKSRYB104K16
C 240	(B,82,96)	CCSRCH220J50	C 373	(B,99,108)	CKSRYB104K16
C 241	(B,69,96)	CCSRCH220J50	C 374	(A,110,116)	CEAL100M16
C 242	(B,86,95)	CKSRYB104K16	C 378	(B,98,114)	CKSRYB105K10
C 243	(B,66,71)	CKSRYB332K50	C 401	(B,173,109)	CKSRYB103K50
C 244	(A,73,79)	CKSYB106K6R3	C 402	(B,156,111)	CKSRYB102K50
C 245	(A,73,74)	CKSYB106K6R3	C 403	(A,160,111)	CEJQ470M10
C 246	(B,58,70)	CKSRYB332K50	C 404	(B,167,110)	CKSYB475K10
C 247	(B,70,86)	CKSYB106K6R3	C 405	(B,174,142)	CKSRYB103K50
C 250	(A,73,69)	CKSYB106K6R3	C 406	(A,160,118)	CEJQ101M10
C 251	(A,74,63)	CKSYB106K6R3	C 408	(B,160,114)	CKSRYB102K50
C 252	(B,78,48)	CKSRYB104K16	C 421	(A,161,96)	CEJQ220M16
C 261	(A,56,68)	CKSRYB104K16	C 422	(B,157,93)	CKSRYB103K50
C 262	(A,98,66)	CKSRYB104K16	C 423	(B,156,83)	CKSYB475K10
C 272	(A,81,69)	CCSRCH560J50	C 424	(B,135,97)	CKSRYB103K50
C 273	(A,85,70)	CKSRYB103K50	C 431	(A,48,112)	CKSRYB104K16
C 281	(A,98,91)	CCSRCH681J50	C 432	(A,33,117)	CKSQYB105K16
C 282	(A,98,99)	CCSRCH681J50	C 433	(A,36,118)	CKSQYB105K16
C 283	(A,101,94)	CCSRCH331J50	C 441	(B,42,127)	CKSQYB225K10
C 284	(A,101,96)	CCSRCH331J50	C 442	(B,53,127)	CKSQYB225K10
C 285	(B,96,89)	CKSRYB105K10	C 443	(B,43,123)	CKSQYB225K10
C 286	(B,104,98)	CKSRYB105K10	C 444	(B,50,123)	CKSQYB225K10
C 287	(B,95,100)	CKSRYB104K16	C 445	(A,41,123)	CCSRCH101J50
C 291	(A,98,70)	CCSRCH681J50	C 446	(A,51,122)	CCSRCH101J50
C 292	(A,98,77)	CCSRCH681J50	C 447	(A,45,118)	CKSRYB105K10
C 293	(A,101,73)	CCSRCH331J50	C 448	(A,40,115)	CEVW100M10
C 294	(A,101,74)	CCSRCH331J50	C 501	(B,99,22)	CKSRYB104K16
C 295	(B,96,68)	CKSRYB105K10	C 511	(B,94,37)	CKSRYB104K16
C 296	(B,104,74)	CKSRYB105K10	C 521	(B,84,18)	CKSRYB104K16
C 297	(B,89,76)	CKSRYB104K16	C 554	(A,46,63)	CEJQ330M10
C 301	(A,98,80)	CCSRCH681J50	C 561	(A,51,66)	CEJQ220M16
C 302	(A,98,88)	CCSRCH681J50	C 562	(B,63,43)	CKSRYB103K50
C 303	(A,101,83)	CCSRCH331J50	C 563	(B,63,33)	CKSYB475K10
C 304	(A,101,85)	CCSRCH331J50	C 566	(B,45,37)	CKSRYB104K16
C 305	(B,96,79)	CKSRYB105K10	C 567	(B,55,40)	CKSRYB103K50
C 306	(B,104,86)	CKSRYB105K10	C 568	(B,55,38)	CKSRYB105K6R3
C 307	(B,89,87)	CKSRYB104K16	C 601	(A,128,83)	CKSRYB104K16
C 321	(A,153,122)	CEJQNP100M10	C 602	(A,140,84)	CKSRYB104K16
C 322	(A,147,122)	CEJQNP100M10	C 603	(A,124,83)	CKSRYB104K16
C 323	(A,140,122)	CEJQNP100M10	C 605	(B,137,89)	CKSRYB103K50
C 324	(A,134,122)	CEJQNP100M10	C 606	(A,134,90)	CEJQ4R7M35
C 325	(A,130,127)	CEJQNP100M10	C 607	(B,151,68)	CCSRCH7R0D50
C 326	(A,131,133)	CEJQNP100M10	C 608	(B,151,64)	CCSRCH7R0D50
C 327	(A,154,134)	CKSRYB102K50	C 610	(A,118,65)	CKSRYB104K16
C 328	(A,149,115)	CEJQ220M16	C 611	(A,138,53)	CKSRYB104K16
C 351	(B,129,123)	CKSQYB474K16	C 612	(A,134,54)	CKSRYB104K16
C 352	(B,124,124)	CKSQYB474K16	C 613	(B,134,78)	CCSRCH331J50
C 353	(B,126,123)	CKSQYB474K16	C 662	(B,155,51)	CKSRYB104K16
C 354	(B,122,124)	CKSQYB474K16	C 663	(A,156,59)	CKSRYB105K10
C 355	(A,117,122)	CEJQ330M10	C 721	(B,30,74)	CKSRYB473K25
C 357	(A,86,125) 3 300 µF/16 V	CCH1486	C 722	(B,29,67)	CKSRYB102K50
C 358	(B,95,140)	CKSRYB104K25	C 723	(A,29,65)	CEJQ101M10
C 359	(A,124,130)	CEHAR100M16	C 743	(A,96,54)	CEJQ101M10
C 360	(A,124,135)	CKSQYB225K10	C 751	(A,138,41)	CEJQ4R7M35
C 361	(A,126,135)	CKSQYB225K10	C 752	(A,138,46)	CEJQ1R0M50
C 363	(B,122,140)	CKSRYB474K10	C 753	(A,138,35)	CEJQ4R7M35
C 364	(B,121,135)	CKSRYB474K10	C 754	(B,112,38)	CKSRYB104K16
C 365	(B,122,138)	CKSRYB474K10	C 755	(B,119,31)	CKSRYB102K50

Circuit Symbol and No.		Part No.
C 756	(B,121,35)	CCSRCH101J50
C 758	(B,134,30)	CKSRYB105K10
C 759	(B,124,53)	CKSRYB104K16
C 760	(B,122,39)	CKSRYB104K16
C 761	(B,128,28)	CKSRYB104K16
C 762	(B,118,45)	CKSRYB472K50
C 763	(B,119,49)	CKSRYB102K50
C 764	(B,112,48)	CKSRYB104K16
C 765	(B,134,34)	CKSRYB471K50
C 768	(B,138,30)	CKSRYB104K16
C 769	(B,75,112)	CKSRYB153K50
C 791	(B,115,71)	CKSRYB103K50
C 792	(A,66,107)	CEJQ470M10
C 793	(B,75,109)	CKSRYB103K50
C 794	(A,79,106)	CCH1325
C 795	(A,71,111)	CEJQ101M10
C 796	(A,44,90)	CKSRYB103K50
C 801	(B,143,43)	CKSRYB103K50
C 802	(B,153,32)	CKSRYB102K50
C 803	(A,142,37)	CCSRCH101J50
C 804	(A,152,37)	CCSRCH101J50
C 806	(B,156,27)	CKSRYB102K50
C 807	(A,157,20)	CKSRYB104K16
C 808	(A,154,24)	CEVW220M16
C 831	(B,80,21)	CKSRYB104K16
C 832	(A,76,11)	CEVW470M10
C 841	(A,57,12)	CEVW470M16
C 842	(B,37,37)	CKSRYB104K16
C 843	(B,36,31)	CKSRYB102K50
C 844	(A,36,29)	CEJQ330M16
C 851	(B,65,15)	CKSRYB473K25
C 852	(A,92,14)	CKSRYB104K16
C 861	(A,61,97)	CKSRYB105K6R3
C 862	(A,61,99)	CKSRYB103K50
C 863	(A,68,98)	CKSRYB104K16
C 871	(A,43,75)	CKSRYB104K16
C 873	(A,41,79)	CEVW101M6R3
C 875	(A,38,85)	CKSRYB105K10
C 877	(A,49,99)	CEVW101M6R3
C 878	(A,55,100)	CKSRYB103K50
C 879	(B,49,98)	CKSYB475K10
C 901	(A,27,47) 2 200 µF/16 V	CCH1405
C 903	(B,28,62)	CKSRYB472K50
C 904	(B,28,52)	CKSRYB103K50
C 905	(A,28,54)	CEJQ470M10
C 911	(A,32,109)	CEJQ221M10
C 912	(B,13,117)	CKSRYB103K50
C 913	(A,13,120)	CEJQ101M10
C 921	(A,31,99) 470 µF/16 V	CCH1325
C 922	(B,30,81)	CKSRYB103K50
C 923	(A,30,77)	CEJQ101M10
C 932	(B,74,121)	CKSRYB104K16
C 941	(A,83,114)	CKSQYB105K16
C 963	(A,77,135)	CKSQYB105K10
C 964	(B,74,132)	CKSQYB105K16
C 965	(B,72,132)	CKSQYB105K16
C 966	(B,73,145)	CKSQYB105K16
C 967	(A,74,135)	CKSQYB105K16
C 968	(A,72,135)	CKSQYB105K16
C 969	(A,69,135)	CKSQYB105K16
C 971	(B,63,112)	CKSRYB103K50
C 972	(B,62,116)	CKSRYB103K50
C 973	(A,64,116)	CEJQ100M16
C 981	(B,82,113)	CKSRYB104K16

A

Unit Number : CWN1437(DEH-P9800BT/XN/UC)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(B,31,140) IC	HA12241FP
IC 121	(A,129,104) IC	PM9009A
IC 122	(A,111,94) IC	TC4066BFT
IC 201	(A,61,77) IC	AK7732VT
IC 221	(A,76,86) IC	PCM1606EG
IC 240	(B,75,96) IC	NJM4558MD
IC 241	(B,78,53) IC	NJM4558MD
IC 261	(A,58,64) IC	TC74VHCT08AFTS1
IC 262	(A,96,62) IC	TC74VHC08FTS1
IC 271	(A,81,71) IC	TC7SH08FUS1
IC 281	(B,96,96) IC	NJM4558MD
IC 282	(B,96,74) IC	NJM4558MD
IC 283	(B,95,85) IC	NJM4558MD
IC 351	(A,102,139) IC	PAL007B
IC 371	(A,99,110) IC	PM8003A
IC 421	(B,160,88) IC	NJM2885DL1-33
IC 441	(A,46,122) IC	NJM4558MD
IC 501	(A,95,28) IC	TC74VHCT08AFTS1
IC 511	(A,95,39) IC	TC74VHC08FTS1
IC 521	(A,99,20) IC	S99-50084
IC 561	(B,65,38) IC	NJM2885DL1-33
IC 566	(B,50,39) IC	NJM2872F05
IC 601	(A,133,67) IC	PEG260A
IC 661	(A,155,66) IC	S-80835CNUA-B8U
IC 751	(B,112,34) IC	NJM4558MD
IC 752	(B,126,47) IC	NJM4151M
IC 753	(B,127,34) IC	NJM4558MD
IC 754	(B,113,51) IC	TC7S14FU
IC 801	(A,147,40) IC	BA6288FS
IC 861	(A,65,98) IC	NJM2872F05
IC 871	(B,57,99) IC	NJM2885DL1-33
Q 101	(A,22,121) Transistor	UMF23N
Q 121	(A,111,89) Transistor	UMD3N
Q 281	(A,104,95) Transistor	UMH3N
Q 282	(A,106,66) Transistor	UMD3N
Q 291	(A,104,73) Transistor	UMH3N
Q 301	(A,104,84) Transistor	UMH3N
Q 321	(A,154,131) Transistor	IMH23
Q 322	(A,148,127) Transistor	IMH23
Q 323	(A,139,127) Transistor	IMH23
Q 324	(A,144,114) Transistor	UMD3N
Q 351	(A,125,124) Transistor	DTC124EUA
Q 391	(A,39,58) Transistor	2SC4081
Q 531	(B,55,43) Transistor	DTC314TU
Q 601	(B,115,64) Transistor	UMD3N
Q 661	(B,155,56) Transistor	2SC4081
Q 721	(A,18,74) Transistor	2SD2396
Q 722	(A,36,72) Transistor	UMD3N
Q 791	(B,57,107) Transistor	2SD1760F5

Circuit Symbol and No.		Part No.
Q 792	(A,57,103) Transistor	UMD3N
Q 793	(B,111,69) Transistor	2SC4081
Q 794	(A,39,96) Transistor	2SC4081
Q 795	(A,39,90) Transistor	UMD3N
Q 801	(B,151,22) Transistor	2SD1760F5
Q 812	(A,153,18) Transistor	UMD3N
Q 831	(A,68,17) Transistor	2SB710A
Q 832	(B,76,27) Transistor	DTC114EU
Q 841	(A,34,19) Transistor	2SD1760F5
Q 842	(A,38,36) Transistor	UMD3N
Q 851	(B,63,24) Transistor	2SD1767
Q 852	(A,66,9) Transistor	UMD3N
Q 853	(A,132,34) Transistor	2SC4081
Q 901	(A,18,57) Transistor	2SD2396
Q 902	(A,34,50) Transistor	UMD3N
Q 911	(A,18,103) Transistor	2SD2396
Q 912	(A,22,118) Transistor	UMD3N
Q 921	(A,18,87) Transistor	2SD2396
Q 922	(B,23,80) Transistor	UMD3N
Q 931	(A,75,116) Transistor	UMX1N
Q 941	(A,83,116) Transistor	DTC114EU
Q 951	(A,92,121) Transistor	2SA1576
Q 971	(A,51,115) Transistor	UMD3N
Q 972	(A,57,117) Transistor	2SD1859
D 121	(B,128,115) Diode	RB520S-30
D 132	(B,124,112) Diode	1SS355
D 133	(B,124,108) Diode	RB521S-30
D 134	(B,124,110) Diode	RB521S-30
D 281	(A,107,73) Diode	DAN202U
D 321	(A,138,117) Diode	1SS133
D 351	(A,117,130) Diode	MPG06G-6415G50
D 352	(A,117,127) Diode	MPG06G-6415G50
D 391	(A,44,69) Diode	DAN202U
D 392	(A,43,72) Diode	HZU9L(A2)
D 421	(A,161,84) Diode	1SR154-400
D 422	(A,161,88) Diode	1SR154-400
D 423	(A,161,91) Diode	1SR154-400
D 431	(A,32,125) Diode	RSB6R8S
D 441	(B,39,118) Diode	RSB6R8S
D 442	(B,50,121) Diode	RSB6R8S
D 531	(B,53,46) Diode	1SS355
D 551	(B,54,59) Diode	DAN202U
D 601	(B,121,61) Diode	DAN202U
D 671	(B,19,140) Diode	DAN202U
D 672	(B,24,140) Diode	DAP202U
D 721	(A,30,72) Diode	HZS9L(A2)
D 751	(B,135,51) Diode Network	DA204U
D 752	(B,126,39) Diode Network	DA204U
D 791	(B,110,73) Diode	HZU6L(B1)
D 792	(B,80,109) Diode	HZU7L(A1)
D 793	(B,40,107) Diode	1SR154-400
D 794	(A,42,90) Diode	HZU9L(B2)
D 801	(A,148,30) Diode	1SS133
D 802	(A,148,34) Diode	1SS133
D 803	(A,149,23) Diode	HZU7L(B2)
D 811	(B,115,13) Diode	DAN202U
D 812	(B,124,13) Diode	DAP202U
D 813	(A,111,27) Diode	DAN202U
D 814	(A,107,27) Diode	DAP202U
D 815	(B,106,15) Diode	DAN202U

Circuit Symbol and No.		Part No.
D 816	(B,106,19) Diode	DAP202U
D 817	(B,106,28) Diode	DAN202U
D 818	(B,106,24) Diode	DAP202U
D 841	(A,36,39) Diode	HZS9L(C2)
D 851	(A,66,13) Diode	HZS11L(A1)
D 853	(A,92,13) LED	SML412BC5T(MN)
D 901	(A,35,59) Diode	MPG06G-6415G50
D 902	(A,29,59) Diode	HZS6L(B1)
D 911	(A,13,115) Diode	HZS9L(B2)
D 921	(A,30,83) Diode	HZS9L(B2)
D 931	(A,73,117) Diode	HZU7L(A1)
D 932	(A,69,118) Diode	HZU7L(C3)
D 941	(A,79,115) Diode	1SR154-400
D 951	(A,92,127) Diode	DAN202U
D 971	(A,57,114) Diode	HZS11L(B2)
D 981	(B,87,109) Diode Network	DA204U
D 982	(B,82,117) Diode	HZU7L(C2)
D 991	(A,98,126) Diode	MPG06G-6415G50
D 992	(A,98,121) Diode	MPG06G-6415G50
D 993	(A,61,103) Diode	DAN202U
ZNR401	(A,161,145)Surge Protector	RCCA-201Q31UA-PI
L 101	(B,24,134) Inductor	LCTAW2R2J2520
L 121	(A,117,117) Inductor	ATH1176
L 201	(A,55,85) Inductor	CTF1379
L 206	(B,66,83) Inductor	CTF1389
L 208	(A,63,68) Inductor	CTF1389
L 221	(A,84,85) Inductor	CTF1379
L 241	(B,84,52) Inductor	CTF1389
L 261	(A,56,70) Inductor	CTF1379
L 262	(A,95,66) Inductor	CTF1379
L 271	(A,83,70) Inductor	CTF1389
L 272	(A,84,72) Inductor	CTF1379
L 371	(B,97,110) Inductor	CTF1379
L 401	(A,160,105) Inductor	LAU1R0K
L 402	(A,154,106) Ferri-Inductor	LAU100K
L 403	(A,154,114) Inductor	LAU1R0K
L 404	(B,167,149) Chip Coil	LCTAW4R7J2520
L 501	(B,95,22) Inductor	CTF1379
L 511	(B,94,35) Inductor	CTF1379
L 521	(B,84,23) Inductor	CTF1379
L 554	(B,60,45) Inductor	CTF1389
L 604	(A,139,90) Ferri-Inductor	LAU100K
L 701	(A,101,27) Inductor	LCTAW2R2J3225
L 831	(A,76,17) Ferri-Inductor	LAU100K
L 841	(A,57,18) Inductor	LAU2R2K
L 872	(A,41,85) Inductor	CTF1617
L 951	(A,86,115) Inductor	LAU2R2K
X 201	(A,59,91)Crystal Resonator 16.934 4 MHz	CSS1052
X 371	(A,87,107)Ceramic Resonator 4.096 MHz	CSS1429
X 601	(A,149,67)Cristal Resonator 20 MHz	VSS1167
VR121	(A,120,112) Semi-fixed 15 kΩ(B)	CCP1397
⚠FU321	(A,136,130) Fuse 3 A	CEK1286
BZ681	(A,152,50) Buzzer	CPV1062
M 972	Fan Motor	CXM1288
	FM/AM Tuner Unit	CWE1951

RESISTORS

R 101	(B,26,130)	RS1/16S181J
R 102	(B,36,124)	RS1/16S181J

Circuit Symbol and No.		Part No.
R 103	(B,27,124)	RS1/16S223J
R 104	(B,33,122)	RS1/16S223J
R 105	(B,29,124)	RS1/16S102J
R 106	(B,31,122)	RS1/16S102J
R 107	(B,39,142)	RS1/16S101J
R 108	(B,39,137)	RS1/16S101J
R 109	(B,39,140)	RS1/16S150J
R 110	(B,39,138)	RS1/16S470J
R 111	(B,39,135)	RS1/16S102J
R 112	(A,26,124)	RS1/16S222J
R 113	(A,23,124)	RS1/16S332J
R 114	(A,20,124)	RS1/16S562J
R 122	(A,139,107)	RS1/16S0R0J
R 123	(A,138,103)	RS1/16S0R0J
R 124	(A,138,114)	RS1/16S0R0J
R 125	(A,138,113)	RS1/16S0R0J
R 126	(A,138,109)	RS1/16S0R0J
R 127	(A,138,107)	RS1/16S0R0J
R 128	(A,139,103)	RS1/16S0R0J
R 129	(A,141,101)	RS1/16S0R0J
R 130	(A,141,99)	RS1/16S0R0J
R 131	(A,141,98)	RS1/16S0R0J
R 132	(A,107,89)	RS1/16S103J
R 133	(A,114,89)	RS1/16S103J
R 134	(A,133,113)	RAB4C102J
R 135	(A,124,113)	RS1/16S103J
R 201	(B,54,88)	RS1/16S104J
R 202	(B,52,88)	RS1/16S104J
R 203	(B,57,79)	RS1/16S153J
R 204	(B,63,84)	RS1/16S222J
R 205	(A,59,68)	RS1/16S681J
R 206	(A,62,87)	RS1/16S101J
R 207	(A,61,68)	RS1/16S681J
R 208	(A,67,86)	RAB4C101J
R 212	(A,69,76)	RS1/16S101J
R 213	(A,68,71)	RS1/16S101J
R 214	(A,67,71)	RS1/16S101J
R 221	(B,78,89)	RS1/16S103J
R 222	(B,78,87)	RS1/16S103J
R 240	(B,83,99)	RS1/16S223J
R 241	(B,83,101)	RS1/16S223J
R 242	(B,84,96)	RS1/16S153J
R 243	(B,67,96)	RS1/16S153J
R 244	(B,72,91)	RS1/16S101J
R 247	(B,75,70)	RS1/16S101J
R 248	(B,79,65)	RS1/16S473J
R 249	(B,77,65)	RS1/16S473J
R 261	(B,58,66)	RS1/16S681J
R 262	(B,58,62)	RS1/16S681J
R 263	(A,69,66)	RAB4C123J
R 264	(B,69,63)	RAB4C223J
R 265	(A,103,63)	RS1/16S681J
R 266	(A,91,62)	RS1/16S681J
R 267	(A,91,63)	RS1/16S681J
R 268	(A,103,66)	RS1/16S681J
R 269	(A,102,66)	RS1/16S681J
R 270	(A,100,66)	RS1/16S681J
R 271	(A,77,72)	RS1/16S0R0J
R 273	(A,82,67)	RS1/16S0R0J
R 274	(A,87,72)	RS1/16S0R0J

Circuit Symbol and No.		Part No.
R 275	(A,91,65)	RS1/16S681J
R 276	(A,93,66)	RS1/16S681J
R 281	(A,98,94)	RS1/16S473J
R 282	(A,98,96)	RS1/16S473J
R 283	(A,98,93)	RS1/16S682J
R 284	(A,98,97)	RS1/16S682J
R 285	(A,101,93)	RS1/16S682J
R 286	(A,101,97)	RS1/16S682J
R 287	(B,100,89)	RS1/16S102J
R 288	(B,103,94)	RS1/16S102J
R 289	(B,102,97)	RS1/16S101J
R 290	(B,89,94)	RS1/16S101J
R 291	(A,98,73)	RS1/16S473J
R 292	(A,98,74)	RS1/16S473J
R 293	(A,98,71)	RS1/16S682J
R 294	(A,98,76)	RS1/16S682J
R 295	(A,101,71)	RS1/16S682J
R 296	(A,101,76)	RS1/16S682J
R 297	(B,100,68)	RS1/16S102J
R 298	(B,103,71)	RS1/16S102J
R 299	(B,102,74)	RS1/16S101J
R 300	(B,89,70)	RS1/16S101J
R 301	(A,98,83)	RS1/16S473J
R 302	(A,98,85)	RS1/16S473J
R 303	(A,98,82)	RS1/16S682J
R 304	(A,98,86)	RS1/16S682J
R 305	(A,101,82)	RS1/16S682J
R 306	(A,101,86)	RS1/16S682J
R 307	(B,100,79)	RS1/16S102J
R 308	(B,103,83)	RS1/16S102J
R 309	(B,102,86)	RS1/16S101J
R 310	(B,89,82)	RS1/16S101J
R 321	(B,151,128)	RS1/16S470J
R 322	(B,149,125)	RS1/16S470J
R 323	(A,157,131)	RS1/16S223J
R 324	(A,154,128)	RS1/16S223J
R 325	(B,145,126)	RS1/16S470J
R 326	(B,139,126)	RS1/16S470J
R 327	(A,151,127)	RS1/16S223J
R 328	(A,145,127)	RS1/16S223J
R 329	(B,136,128)	RS1/16S470J
R 330	(B,136,134)	RS1/16S470J
R 331	(A,142,127)	RS1/16S223J
R 332	(A,134,130)	RS1/16S223J
R 333	(A,145,118)	RS1/16S102J
R 351	(B,99,147)	RS1/16S103J
R 352	(A,125,121)	RS1/16S103J
R 353	(A,125,126)	RS1/16S103J
R 354	(A,122,125)	RS1/16S331J
R 371	(B,91,108)	RS1/16S0R0J
R 372	(B,100,110)	RS1/16S473J
R 373	(B,130,78)	RS1/16S104J
R 391	(A,39,54)	RS1/16S103J
R 392	(A,40,65)	RS1/16S223J
R 393	(A,38,65)	RS1/16S103J
R 394	(A,37,65)	RS1/16S473J
R 405	(B,167,114)	RS1/16S681J
R 406	(B,173,130)	RS1/16S681J
R 407	(B,173,132)	RS1/16S681J
R 408	(B,173,134)	RS1/16S681J

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
R 409	(B,173,136)	RS1/16S681J	R 661	(B,155,49)	RS1/16S222J
R 410	(B,174,140)	RS1/16S681J	R 662	(A,153,59)	RS1/16S102J
R 433	(A,43,113)	RS1/16S0R0J	R 664	(B,155,53)	RS1/16S473J
R 434	(A,51,103)	RS1/16S0R0J	R 665	(A,156,61)	RS1/16S183J
R 441	(B,44,131)	RS1/16S223J	R 671	(B,13,140)	RS1/16S102J
R 442	(B,51,131)	RS1/16S223J	R 672	(B,15,140)	RS1/16S102J
R 443	(B,44,127)	RS1/16S103J	R 681	(B,149,50)	RS1/16S102J
R 444	(B,51,127)	RS1/16S103J	R 701	(B,96,43)	RS1/16S682J
R 445	(B,42,131)	RS1/16S103J	R 702	(B,96,47)	RS1/16S682J
R 446	(B,53,131)	RS1/16S103J	R 703	(A,98,47)	RS1/16S682J
R 447	(A,40,121)	RS1/16S103J	R 704	(A,98,50)	RS1/16S682J
R 448	(A,40,119)	RS1/16S103J	R 705	(B,96,51)	RS1/16S221J
R 449	(A,39,123)	RS1/16S103J	R 706	(B,108,49)	RS1/16S221J
R 450	(A,52,122)	RS1/16S103J	R 707	(B,96,49)	RS1/16S221J
R 451	(A,45,116)	RS1/16S104J	R 708	(B,108,47)	RS1/16S221J
R 452	(A,47,117)	RS1/16S104J	R 709	(B,96,45)	RS1/16S221J
R 501	(B,95,24)	RS1/16S681J	R 710	(B,108,45)	RS1/16S681J
R 502	(B,95,26)	RS1/16S681J	R 711	(B,106,40)	RS1/16S473J
R 503	(B,89,31)	RAB4C681J	R 712	(A,116,69)	RS1/16S104J
R 511	(B,65,49)	RS1/16S182J	R 721	(B,24,65)	RS1/4SA391J
R 512	(B,82,40)	RAB4C681J	R 751	(B,135,39)	RS1/16S393J
R 513	(B,65,51)	RS1/16S332J	R 752	(B,129,51)	RS1/16S104J
R 514	(B,61,51)	RS1/16S332J	R 753	(B,135,41)	RS1/16S472J
R 515	(B,89,40)	RAB4C681J	R 754	(B,135,37)	RS1/16S471J
R 516	(B,65,53)	RS1/16S182J	R 755	(B,133,48)	RS1/16S273J
R 521	(B,82,31)	RAB4C101J	R 757	(B,121,31)	RS1/16S104J
R 522	(B,88,25)	RS1/16S101J	R 758	(B,119,35)	RS1/16S222J
R 523	(B,88,23)	RS1/16S101J	R 759	(B,120,38)	RS1/16S471J
R 531	(B,51,42)	RS1/16S223J	R 760	(B,120,28)	RS1/16S471J
R 532	(B,49,43)	RS1/16S102J	R 761	(B,115,39)	RS1/16S473J
R 552	(B,45,69)	RS1/16S0R0J	R 762	(B,112,40)	RS1/16S473J
R 554	(B,43,69)	RS1/16S102J	R 763	(B,118,52)	RS1/16S103J
R 555	(B,41,51)	RS1/16S220J	R 764	(B,129,53)	RS1/16S103J
R 556	(B,53,49)	RS1/16S102J	R 765	(B,112,46)	RS1/16S473J
R 557	(B,48,54)	RS1/16S0R0J	R 766	(B,112,44)	RS1/16S473J
R 601	(B,131,87)	RS1/16S104J	R 767	(B,120,52)	RS1/16S472J
R 603	(B,131,85)	RS1/16S104J	R 768	(B,118,47)	RS1/16S103J
R 604	(A,135,52)	RS1/16S103J	R 769	(B,124,51)	RS1/16S682J
R 605	(B,131,83)	RS1/16S104J	R 770	(B,136,34)	RS1/16S333J
R 606	(A,139,81)	RS1/16S102J	R 771	(B,136,30)	RS1/16S332J
R 607	(B,132,73)	RS1/16S104J	R 773	(B,117,50)	RS1/16S0R0J
R 608	(A,126,82)	RS1/16S104J	R 774	(B,128,30)	RS1/16S473J
R 609	(A,119,71)	RS1/16S102J	R 775	(B,130,38)	RS1/16S473J
R 611	(B,141,83)	RS1/16S472J	R 776	(B,139,27)	RS1/16S473J
R 613	(B,140,85)	RS1/16S472J	R 777	(B,140,30)	RS1/16S473J
R 615	(B,135,65)	RS1/16S104J	R 791	(B,107,69)	RS1/16S122J
R 616	(B,135,69)	RS1/16S104J	R 792	(A,54,105)	RS1/16S821J
R 617	(A,142,53)	RAB4C104J	R 793	(A,39,94)	RS1/16S152J
R 619	(B,146,66)	RS1/16S0R0J	R 801	(A,152,42)	RS1/16S102J
R 621	(A,119,60)	RAB4C104J	R 802	(A,142,42)	RS1/16S102J
R 625	(A,119,69)	RS1/16S104J	R 803	(B,149,38)	RS1/16S103J
R 627	(A,134,82)	RAB4C681J	R 804	(B,143,41)	RS1/16S563J
R 628	(A,131,81)	RS1/16S681J	R 806	(B,152,42)	RS1/16S102J
R 629	(B,127,78)	RS1/16S681J	R 807	(A,151,18)	RS1/4SA102J
R 631	(A,116,64)	RS1/16S104J	R 808	(B,152,38)	RS1/16S102J
R 632	(A,131,52)	RS1/16S104J	R 811	(B,110,26)	RS1/16S222J
R 633	(B,136,57)	RS1/16S104J	R 812	(B,112,18)	RS1/16S222J
R 636	(A,120,57)	RS1/16S0R0J	R 813	(B,110,28)	RS1/16S222J
R 640	(A,120,55)	RS1/16S0R0J	R 814	(B,115,17)	RS1/16S222J
R 652	(A,149,76)	RS1/16S104J	R 815	(A,116,27)	RS1/16S222J

Circuit Symbol and No.		Part No.
R 816	(B,117,17)	RS1/16S222J
R 817	(B,120,17)	RS1/16S222J
R 818	(A,118,27)	RS1/16S222J
R 819	(A,120,27)	RS1/16S104J
R 820	(B,107,21)	RS1/16S223J
R 821	(B,109,12)	RS1/16S473J
R 831	(B,70,15)	RS1/16S472J
R 832	(B,72,27)	RS1/16S821J
R 833	(B,80,23)	RS1/16S222J
R 841	(A,39,24)	RS1/16S1R0J
R 842	(A,37,33)	RS1/4SA271J
R 851	(B,63,27)	RS1/16S1R0J
R 852	(B,59,20)	RS1/4SA391J
R 853	(A,134,34)	RS1/16S562J
R 854	(A,132,37)	RS1/16S103J
R 855	(A,89,16)	RS1/16S151J
R 901	(B,22,56)	RS1/16S223J
R 902	(A,36,50)	RS1/16S272J
R 911	(A,22,116)	RS1/16S821J
R 921	(B,16,85)	RS1/16S821J
R 931	(A,69,116)	RS1/16S104J
R 932	(A,75,118)	RS1/16S103J
R 933	(B,70,121)	RS1/16S473J
R 934	(B,68,121)	RS1/16S473J
R 935	(B,72,121)	RS1/16S472J
R 941	(A,82,118)	RS1/16S103J
R 951	(A,91,119)	RS1/16S102J
R 952	(A,89,121)	RS1/16S472J
R 953	(A,92,124)	RS1/16S472J
R 954	(A,90,124)	RS1/16S153J
R 971	(A,52,119)	RS1/16S391J
R 972	(B,65,120)	RS1/16S1R0J
R 981	(B,79,112)	RS1/16S102J
R 982	(B,82,111)	RS1/16S153J
R 983	(B,75,118)	RS1/16S102J

CAPACITORS

C 101	(B,34,134)	CKSRYB104K16
C 102	(B,35,144)	CKSRYB102K50
C 103	(B,39,144)	CKSRYB102K50
C 121	(A,114,106)	CKSQYB225K10
C 122	(A,114,104)	CKSQYB225K10
C 123	(A,114,108)	CKSQYB225K10
C 124	(A,114,102)	CKSQYB225K10
C 125	(A,120,106)	CKSRYB105K10
C 126	(A,120,104)	CKSRYB105K10
C 127	(A,120,102)	CKSRYB104K16
C 128	(A,120,101)	CKSRYB104K16
C 129	(A,120,94)	CEJQ4R7M35
C 130	(A,126,94)	CEJQ4R7M35
C 131	(A,117,98)	CKSQYB225K10
C 132	(A,114,113)	CKSYB475K10
C 133	(A,114,111)	CKSYB475K10
C 134	(A,127,113)	CKSRYB105K10
C 135	(A,130,113)	CKSRYB105K10
C 136	(A,122,117)	CEJQ470M10
C 137	(A,129,117)	CEJQ470M10
C 138	(A,107,90)	CKSRYB104K16
C 139	(B,119,111)	CKSRYB105K10

Circuit Symbol and No.		Part No.
C 151	(B,129,113)	CKSRYB105K10
C 201	(B,54,81)	CKSRYB104K16
C 202	(B,56,82)	CKSRYB682K50
C 203	(B,56,76)	CKSRYB104K16
C 204	(B,54,74)	CKSRYB104K16
C 205	(A,51,83)	CEJQ100M16
C 206	(A,51,77)	CEJQ100M16
C 207	(A,51,72)	CEJQ100M16
C 208	(B,58,84)	CKSRYB104K16
C 209	(B,57,87)	CCSRCH8R0D50
C 210	(B,62,76)	CKSRYB104K16
C 211	(B,62,87)	CCSRCH8R0D50
C 212	(B,63,79)	CKSRYB104K16
C 213	(B,64,75)	CKSRYB104K16
C 214	(B,63,82)	CCSRCH680J50
C 215	(B,65,79)	CKSRYB104K16
C 216	(B,68,67)	CCSRCH680J50
C 217	(B,50,88)	CKSYB106K6R3
C 220	(B,65,94)	CKSRYB103K50
C 221	(B,81,86)	CCSRCH101J50
C 224	(A,81,77)	CEVW100M10
C 225	(A,83,83)	CKSRYB104K16
C 226	(A,87,77)	CSZS100M16
C 227	(A,84,83)	CKSRYB104K16
C 228	(A,93,87)	CEVW100M10
C 229	(A,93,81)	CEVW100M10
C 230	(A,93,76)	CEVW100M10
C 231	(A,93,70)	CEVW100M10
C 232	(A,93,98)	CEVW100M10
C 233	(A,93,92)	CEVW100M10
C 240	(B,82,96)	CCSRCH220J50
C 241	(B,69,96)	CCSRCH220J50
C 242	(B,86,95)	CKSRYB104K16
C 243	(B,66,71)	CKSRYB332K50
C 244	(A,73,79)	CKSYB106K6R3
C 245	(A,73,74)	CKSYB106K6R3
C 246	(B,58,70)	CKSRYB332K50
C 247	(B,70,86)	CKSYB106K6R3
C 250	(A,73,69)	CKSYB106K6R3
C 251	(A,74,63)	CKSYB106K6R3
C 252	(B,78,48)	CKSRYB104K16
C 261	(A,56,68)	CKSRYB104K16
C 262	(A,98,66)	CKSRYB104K16
C 272	(A,81,69)	CCSRCH560J50
C 273	(A,85,70)	CKSRYB103K50
C 281	(A,98,91)	CCSRCH681J50
C 282	(A,98,99)	CCSRCH681J50
C 283	(A,101,94)	CCSRCH331J50
C 284	(A,101,96)	CCSRCH331J50
C 285	(B,96,89)	CKSRYB105K10
C 286	(B,104,98)	CKSRYB105K10
C 287	(B,95,100)	CKSRYB104K16
C 291	(A,98,70)	CCSRCH681J50
C 292	(A,98,77)	CCSRCH681J50
C 293	(A,101,73)	CCSRCH331J50
C 294	(A,101,74)	CCSRCH331J50
C 295	(B,96,68)	CKSRYB105K10
C 296	(B,104,74)	CKSRYB105K10
C 297	(B,89,76)	CKSRYB104K16
C 301	(A,98,80)	CCSRCH681J50

Circuit Symbol and No.		Part No.
C 302	(A,98,88)	CCSRCH681J50
C 303	(A,101,83)	CCSRCH331J50
C 304	(A,101,85)	CCSRCH331J50
C 305	(B,96,79)	CKSRYB105K10
C 306	(B,104,86)	CKSRYB105K10
C 307	(B,89,87)	CKSRYB104K16
C 321	(A,153,122)	CEJQNP100M10
C 322	(A,147,122)	CEJQNP100M10
C 323	(A,140,122)	CEJQNP100M10
C 324	(A,134,122)	CEJQNP100M10
C 325	(A,130,127)	CEJQNP100M10
C 326	(A,131,133)	CEJQNP100M10
C 327	(A,154,134)	CKSRYB102K50
C 328	(A,149,115)	CEJQ220M16
C 351	(B,129,123)	CKSQYB474K16
C 352	(B,124,124)	CKSQYB474K16
C 353	(B,126,123)	CKSQYB474K16
C 354	(B,122,124)	CKSQYB474K16
C 355	(A,117,122)	CEJQ330M10
C 357	(A,86,125) 3 300 µF/16 V	CCH1486
C 358	(B,95,140)	CKSRYB104K25
C 359	(A,124,130)	CEHAR100M16
C 360	(A,124,135)	CKSQYB225K10
C 361	(A,126,135)	CKSQYB225K10
C 363	(B,122,140)	CKSRYB474K10
C 364	(B,121,135)	CKSRYB474K10
C 365	(B,122,138)	CKSRYB474K10
C 366	(B,121,133)	CKSRYB474K10
C 371	(B,94,112)	CKSRYB104K16
C 372	(B,99,112)	CKSRYB104K16
C 373	(B,99,108)	CKSRYB104K16
C 374	(A,110,116)	CEAL100M16
C 378	(B,98,114)	CKSRYB105K10
C 401	(B,173,109)	CKSRYB103K50
C 402	(B,156,111)	CKSRYB102K50
C 403	(A,160,111)	CEJQ470M10
C 404	(B,167,110)	CKSYB475K10
C 405	(B,174,142)	CKSRYB103K50
C 406	(A,160,118)	CEJQ101M10
C 408	(B,160,114)	CKSRYB102K50
C 421	(A,161,96)	CEJQ220M16
C 422	(B,157,93)	CKSRYB103K50
C 423	(B,156,83)	CKSYB475K10
C 424	(B,135,97)	CKSRYB103K50
C 432	(A,33,117)	CKSQYB105K16
C 433	(A,36,118)	CKSQYB105K16
C 441	(B,42,127)	CKSQYB225K10
C 442	(B,53,127)	CKSQYB225K10
C 443	(B,43,123)	CKSQYB225K10
C 444	(B,50,123)	CKSQYB225K10
C 445	(A,41,123)	CCSRCH101J50
C 446	(A,51,122)	CCSRCH101J50
C 447	(A,45,118)	CKSRYB105K10
C 448	(A,40,115)	CEVW100M10
C 501	(B,99,22)	CKSRYB104K16
C 511	(B,94,37)	CKSRYB104K16
C 521	(B,84,18)	CKSRYB104K16
C 554	(A,46,63)	CEJQ330M10
C 561	(A,51,66)	CEJQ220M16
C 562	(B,63,43)	CKSRYB103K50

Circuit Symbol and No.		Part No.
C 563	(B,63,33)	CKSYB475K10
C 566	(B,45,37)	CKSRYB104K16
C 567	(B,55,40)	CKSRYB103K50
C 568	(B,55,38)	CKSRYB105K6R3
C 601	(A,128,83)	CKSRYB104K16
C 602	(A,140,84)	CKSRYB104K16
C 603	(A,124,83)	CKSRYB104K16
C 605	(B,137,89)	CKSRYB103K50
C 606	(A,134,90)	CEJQ4R7M35
C 607	(B,151,68)	CCSRCH7R0D50
C 608	(B,151,64)	CCSRCH7R0D50
C 610	(A,118,65)	CKSRYB104K16
C 611	(A,138,53)	CKSRYB104K16
C 612	(A,134,54)	CKSRYB104K16
C 613	(B,134,78)	CCSRCH331J50
C 662	(B,155,51)	CKSRYB104K16
C 663	(A,156,59)	CKSRYB105K10
C 721	(B,30,74)	CKSRYB473K25
C 722	(B,29,67)	CKSRYB102K50
C 723	(A,29,65)	CEJQ101M10
C 743	(A,96,54)	CEJQ101M10
C 751	(A,138,41)	CEJQ4R7M35
C 752	(A,138,46)	CEJQ1R0M50
C 753	(A,138,35)	CEJQ4R7M35
C 754	(B,112,38)	CKSRYB104K16
C 755	(B,119,31)	CKSRYB102K50
C 756	(B,121,35)	CCSRCH101J50
C 758	(B,134,30)	CKSRYB105K10
C 759	(B,124,53)	CKSRYB104K16
C 760	(B,122,39)	CKSRYB104K16
C 761	(B,128,28)	CKSRYB104K16
C 762	(B,118,45)	CKSRYB472K50
C 763	(B,119,49)	CKSRYB102K50
C 764	(B,112,48)	CKSRYB104K16
C 765	(B,134,34)	CKSRYB471K50
C 768	(B,138,30)	CKSRYB104K16
C 769	(B,75,112)	CKSRYB153K50
C 791	(B,115,71)	CKSRYB103K50
C 792	(A,66,107)	CEJQ470M10
C 793	(B,75,109)	CKSRYB103K50
C 794	(A,79,106)	CCH1325
C 795	(A,71,111)	CEJQ101M10
C 796	(A,44,90)	CKSRYB103K50
C 801	(B,143,43)	CKSRYB103K50
C 802	(B,153,32)	CKSRYB102K50
C 803	(A,142,37)	CCSRCH101J50
C 804	(A,152,37)	CCSRCH101J50
C 806	(B,156,27)	CKSRYB102K50
C 807	(A,157,20)	CKSRYB104K16
C 808	(A,154,24)	CEVW220M16
C 831	(B,80,21)	CKSRYB104K16
C 832	(A,76,11)	CEVW470M10
C 841	(A,57,12)	CEVW470M16
C 842	(B,37,37)	CKSRYB104K16
C 843	(B,36,31)	CKSRYB102K50
C 844	(A,36,29)	CEJQ330M16
C 851	(B,65,15)	CKSRYB473K25
C 852	(A,92,14)	CKSRYB104K16
C 861	(A,61,97)	CKSRYB105K6R3
C 862	(A,61,99)	CKSRYB103K50

Circuit Symbol and No.		Part No.
C 863	(A,68,98)	CKSRYB104K16
C 871	(A,43,75)	CKSRYB104K16
C 873	(A,41,79)	CEVW101M6R3
C 875	(A,38,85)	CKSRYB105K10
C 877	(A,49,99)	CEVW101M6R3
C 878	(A,55,100)	CKSRYB103K50
C 879	(B,49,98)	CKSYB475K10
C 901	(A,27,47) 2 200 µF/16 V	CCH1405
C 903	(B,28,62)	CKSRYB472K50
C 904	(B,28,52)	CKSRYB103K50
C 905	(A,28,54)	CEJQ470M10
C 911	(A,32,109)	CEJQ221M10
C 912	(B,13,117)	CKSRYB103K50
C 913	(A,13,120)	CEJQ101M10
C 921	(A,31,99) 470 µF/16 V	CCH1325
C 922	(B,30,81)	CKSRYB103K50
C 923	(A,30,77)	CEJQ101M10
C 932	(B,74,121)	CKSRYB104K16
C 941	(A,83,114)	CKSQYB105K16
C 963	(A,77,135)	CKSQYB105K10
C 964	(B,74,132)	CKSQYB105K16
C 965	(B,72,132)	CKSQYB105K16
C 966	(B,73,145)	CKSQYB105K16
C 967	(A,74,135)	CKSQYB105K16
C 968	(A,72,135)	CKSQYB105K16
C 969	(A,69,135)	CKSQYB105K16
C 971	(B,63,112)	CKSRYB103K50
C 972	(B,62,116)	CKSRYB103K50
C 973	(A,64,116)	CEJQ100M16
C 981	(B,82,113)	CKSRYB104K16

A

Unit Number : CWN1438(DEH-P9850BT/XN/ES)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(B,31,140) IC	HA12241FP
IC 121	(A,129,104) IC	PM9009A
IC 122	(A,111,94) IC	TC4066BFT
IC 201	(A,61,77) IC	AK7732VT
IC 221	(A,76,86) IC	PCM1606EG
IC 240	(B,75,96) IC	NJM4558MD
IC 241	(B,78,53) IC	NJM4558MD
IC 261	(A,58,64) IC	TC74VHCT08AFTS1
IC 262	(A,96,62) IC	TC74VHC08FTS1
IC 271	(A,81,71) IC	TC7SH08FUS1
IC 281	(B,96,96) IC	NJM4558MD
IC 282	(B,96,74) IC	NJM4558MD
IC 283	(B,95,85) IC	NJM4558MD
IC 351	(A,102,139) IC	PAL007B
IC 371	(A,99,110) IC	PM8003A
IC 421	(B,160,88) IC	NJM2885DL1-33
IC 431	(A,48,108) IC	TC4066BFT
IC 441	(A,46,122) IC	NJM4558MD
IC 501	(A,95,28) IC	TC74VHCT08AFTS1
IC 511	(A,95,39) IC	TC74VHC08FTS1
IC 521	(A,99,20) IC	S99-50084
IC 561	(B,65,38) IC	NJM2885DL1-33
IC 566	(B,50,39) IC	NJM2872F05
IC 601	(A,133,67) IC	PEG261A
IC 661	(A,155,66) IC	S-80835CNUA-B8U
IC 751	(B,112,34) IC	NJM4558MD
IC 752	(B,126,47) IC	NJM4151M
IC 753	(B,127,34) IC	NJM4558MD
IC 754	(B,113,51) IC	TC7S14FU
IC 801	(A,147,40) IC	BA6288FS
IC 861	(A,65,98) IC	NJM2872F05
IC 871	(B,57,99) IC	NJM2885DL1-33
Q 101	(A,22,121) Transistor	UMF23N
Q 121	(A,111,89) Transistor	UMD3N
Q 181	(A,105,120) Transistor	2SC3052-12
Q 182	(A,108,130) Transistor	UMD3N
Q 183	(B,115,93) Transistor	2SC4081
Q 281	(A,104,95) Transistor	UMH3N
Q 282	(A,106,66) Transistor	UMD3N
Q 291	(A,104,73) Transistor	UMH3N
Q 301	(A,104,84) Transistor	UMH3N
Q 321	(A,154,131) Transistor	IMH23
Q 322	(A,148,127) Transistor	IMH23
Q 323	(A,139,127) Transistor	IMH23
Q 324	(A,144,114) Transistor	UMD3N
Q 351	(A,125,124) Transistor	DTC124EUA
Q 391	(A,39,58) Transistor	2SC4081
Q 431	(A,46,114) Transistor	UMD3N
Q 531	(B,55,43) Transistor	DTC314TU
Q 601	(B,115,64) Transistor	UMD3N
Q 661	(B,155,56) Transistor	2SC4081
Q 721	(A,18,74) Transistor	2SD2396
Q 722	(A,36,72) Transistor	UMD3N
Q 791	(B,57,107) Transistor	2SD1760F5
Q 792	(A,57,103) Transistor	UMD3N
Q 793	(B,111,69) Transistor	2SC4081
Q 794	(A,39,96) Transistor	2SC4081
Q 795	(A,39,90) Transistor	UMD3N
Q 801	(B,151,22) Transistor	2SD1760F5
Q 812	(A,153,18) Transistor	UMD3N
Q 831	(A,68,17) Transistor	2SB710A
Q 832	(B,76,27) Transistor	DTC114EU
Q 841	(A,34,19) Transistor	2SD1760F5
Q 842	(A,38,36) Transistor	UMD3N
Q 851	(B,63,24) Transistor	2SD1767
Q 852	(A,66,9) Transistor	UMD3N
Q 853	(A,132,34) Transistor	2SC4081
Q 901	(A,18,57) Transistor	2SD2396
Q 902	(A,34,50) Transistor	UMD3N
Q 911	(A,18,103) Transistor	2SD2396
Q 912	(A,22,118) Transistor	UMD3N
Q 921	(A,18,87) Transistor	2SD2396
Q 922	(B,23,80) Transistor	UMD3N
Q 931	(A,75,116) Transistor	UMX1N
Q 941	(A,83,116) Transistor	DTC114EU
Q 951	(A,92,121) Transistor	2SA1576
Q 971	(A,51,115) Transistor	UMD3N
Q 972	(A,57,117) Transistor	2SD1859
D 121	(B,128,115) Diode	RB520S-30
D 132	(B,124,112) Diode	1SS355
D 133	(B,124,108) Diode	RB521S-30
D 134	(B,124,110) Diode	RB521S-30
D 181	(A,107,127) Diode	HZU3R9(B1)

Circuit Symbol and No.		Part No.
D 281	(A,107,73) Diode	DAN202U
D 321	(A,138,117) Diode	1SS133
D 351	(A,117,130) Diode	MPG06G-6415G50
D 352	(A,117,127) Diode	MPG06G-6415G50
D 391	(A,44,69) Diode	DAN202U
D 392	(A,43,72) Diode	HZU9L(A2)
D 421	(A,161,84) Diode	1SR154-400
D 422	(A,161,88) Diode	1SR154-400
D 423	(A,161,91) Diode	1SR154-400
D 431	(A,32,125) Diode	RSB6R8S
D 441	(B,39,118) Diode	RSB6R8S
D 442	(B,50,121) Diode	RSB6R8S
D 531	(B,53,46) Diode	1SS355
D 551	(B,54,59) Diode	DAN202U
D 601	(B,121,61) Diode	DAN202U
D 721	(A,30,72) Diode	HZS9L(A2)
D 751	(B,135,51) Diode Network	DA204U
D 752	(B,126,39) Diode Network	DA204U
D 791	(B,110,73) Diode	HZU6L(B1)
D 792	(B,80,109) Diode	HZU7L(A1)
D 793	(B,40,107) Diode	1SR154-400
D 794	(A,42,90) Diode	HZU9L(B2)
D 801	(A,148,30) Diode	1SS133
D 802	(A,148,34) Diode	1SS133
D 803	(A,149,23) Diode	HZU7L(B2)
D 811	(B,115,13) Diode	DAN202U
D 812	(B,124,13) Diode	DAP202U
D 813	(A,111,27) Diode	DAN202U
D 814	(A,107,27) Diode	DAP202U
D 815	(B,106,15) Diode	DAN202U
D 816	(B,106,19) Diode	DAP202U
D 817	(B,106,28) Diode	DAN202U
D 818	(B,106,24) Diode	DAP202U
D 841	(A,36,39) Diode	HZS9L(C2)
D 851	(A,66,13) Diode	HZS11L(A1)
D 853	(A,92,13) LED	SML412BC5T(MN)
D 901	(A,35,59) Diode	MPG06G-6415G50
D 902	(A,29,59) Diode	HZS6L(B1)
D 911	(A,13,115) Diode	HZS9L(B2)
D 921	(A,30,83) Diode	HZS9L(B2)
D 931	(A,73,117) Diode	HZU7L(A1)
D 932	(A,69,118) Diode	HZU7L(C3)
D 941	(A,79,115) Diode	1SR154-400
D 951	(A,92,127) Diode	DAN202U
D 971	(A,57,114) Diode	HZS11L(B2)
D 981	(B,87,109) Diode Network	DA204U
D 982	(B,82,117) Diode	HZU7L(C2)
D 991	(A,98,126) Diode	MPG06G-6415G50
D 992	(A,98,121) Diode	MPG06G-6415G50
D 993	(A,61,103) Diode	DAN202U
ZNR401	(A,161,145)Surge Protector	RCCA-201Q31UA-PI
L 101	(B,24,134) Inductor	LCTAW2R2J2520
L 121	(A,117,117) Inductor	ATH1176
L 201	(A,55,85) Inductor	CTF1379
L 206	(B,66,83) Inductor	CTF1389
L 208	(A,63,68) Inductor	CTF1389
L 221	(A,84,85) Inductor	CTF1379
L 241	(B,84,52) Inductor	CTF1389
L 261	(A,56,70) Inductor	CTF1379
L 262	(A,95,66) Inductor	CTF1379

Circuit Symbol and No.		Part No.
L 271	(A,83,70) Inductor	CTF1389
L 272	(A,84,72) Inductor	CTF1379
L 371	(B,97,110) Inductor	CTF1379
L 401	(A,160,105) Inductor	LAU1R0K
L 402	(A,154,106) Ferri-Inductor	LAU100K
L 403	(A,154,114) Inductor	LAU1R0K
L 404	(B,167,149) Chip Coil	LCTAW4R7J2520
L 501	(B,95,22) Inductor	CTF1379
L 511	(B,94,35) Inductor	CTF1379
L 521	(B,84,23) Inductor	CTF1379
L 554	(B,60,45) Inductor	CTF1389
L 604	(A,139,90) Ferri-Inductor	LAU100K
L 701	(A,101,27) Inductor	LCTAW2R2J3225
L 831	(A,76,17) Ferri-Inductor	LAU100K
L 841	(A,57,18) Inductor	LAU2R2K
L 872	(A,41,85) Inductor	CTF1617
L 951	(A,86,115) Inductor	LAU2R2K
X 201	(A,59,91)Crystal Resonator 16.934 4 MHz	CSS1052
X 371	(A,87,107)Ceramic Resonator 4.096 MHz	CSS1429
X 601	(A,149,67)Crystal Resonator 20 MHz	VSS1167
VR121	(A,120,112)Semi-fixed 15 kΩ(B)	CCP1397
⚠FU321	(A,136,130) Fuse 3 A	CEK1286
BZ681	(A,152,50) Buzzer	CPV1062
M 972	Fan Motor	CXM1288
	FM/AM Tuner Unit	CWE1952

RESISTORS

R 101	(B,26,130)	RS1/16S181J
R 102	(B,36,124)	RS1/16S181J
R 103	(B,27,124)	RS1/16S223J
R 104	(B,33,122)	RS1/16S223J
R 105	(B,29,124)	RS1/16S102J
R 106	(B,31,122)	RS1/16S102J
R 107	(B,39,142)	RS1/16S101J
R 108	(B,39,137)	RS1/16S101J
R 109	(B,39,140)	RS1/16S150J
R 110	(B,39,138)	RS1/16S470J
R 111	(B,39,135)	RS1/16S102J
R 112	(A,26,124)	RS1/16S222J
R 113	(A,23,124)	RS1/16S332J
R 114	(A,20,124)	RS1/16S562J
R 122	(A,139,107)	RS1/16S0R0J
R 123	(A,138,103)	RS1/16S0R0J
R 124	(A,138,114)	RS1/16S0R0J
R 125	(A,138,113)	RS1/16S0R0J
R 126	(A,138,109)	RS1/16S0R0J
R 127	(A,138,107)	RS1/16S0R0J
R 128	(A,139,103)	RS1/16S0R0J
R 129	(A,141,101)	RS1/16S0R0J
R 130	(A,141,99)	RS1/16S0R0J
R 131	(A,141,98)	RS1/16S0R0J
R 132	(A,107,89)	RS1/16S103J
R 133	(A,114,89)	RS1/16S103J
R 134	(A,133,113)	RAB4C102J
R 135	(A,124,113)	RS1/16S103J
R 181	(A,102,130)	RS1/16S104J
R 182	(B,110,125)	RS1/16S683J
R 183	(A,98,130)	RS1/16S153J
R 184	(B,116,125)	RS1/16S682J

Circuit Symbol and No.		Part No.
R 185	(A,104,124)	RS1/16S152J
R 186	(A,104,130)	RS1/16S222J
R 187	(A,105,130)	RS1/16S561J
R 188	(A,110,130)	RS1/16S473J
R 189	(B,107,97)	RS1/16S103J
R 190	(B,111,97)	RS1/16S223J
R 191	(B,115,97)	RS1/16S104J
R 201	(B,54,88)	RS1/16S104J
R 202	(B,52,88)	RS1/16S104J
R 203	(B,57,79)	RS1/16S153J
R 204	(B,63,84)	RS1/16S222J
R 205	(A,59,68)	RS1/16S681J
R 206	(A,62,87)	RS1/16S101J
R 207	(A,61,68)	RS1/16S681J
R 208	(A,67,86)	RAB4C101J
R 212	(A,69,76)	RS1/16S101J
R 213	(A,68,71)	RS1/16S101J
R 214	(A,67,71)	RS1/16S101J
R 221	(B,78,89)	RS1/16S103J
R 222	(B,78,87)	RS1/16S103J
R 240	(B,83,99)	RS1/16S223J
R 241	(B,83,101)	RS1/16S223J
R 242	(B,84,96)	RS1/16S153J
R 243	(B,67,96)	RS1/16S153J
R 244	(B,72,91)	RS1/16S101J
R 247	(B,75,70)	RS1/16S101J
R 248	(B,79,65)	RS1/16S473J
R 249	(B,77,65)	RS1/16S473J
R 261	(B,58,66)	RS1/16S681J
R 262	(B,58,62)	RS1/16S681J
R 263	(A,69,66)	RAB4C123J
R 264	(B,69,63)	RAB4C223J
R 265	(A,103,63)	RS1/16S681J
R 266	(A,91,62)	RS1/16S681J
R 267	(A,91,63)	RS1/16S681J
R 268	(A,103,66)	RS1/16S681J
R 269	(A,102,66)	RS1/16S681J
R 270	(A,100,66)	RS1/16S681J
R 271	(A,77,72)	RS1/16S0R0J
R 273	(A,82,67)	RS1/16S0R0J
R 274	(A,87,72)	RS1/16S0R0J
R 275	(A,91,65)	RS1/16S681J
R 276	(A,93,66)	RS1/16S681J
R 281	(A,98,94)	RS1/16S473J
R 282	(A,98,96)	RS1/16S473J
R 283	(A,98,93)	RS1/16S682J
R 284	(A,98,97)	RS1/16S682J
R 285	(A,101,93)	RS1/16S682J
R 286	(A,101,97)	RS1/16S682J
R 287	(B,100,89)	RS1/16S102J
R 288	(B,103,94)	RS1/16S102J
R 289	(B,102,97)	RS1/16S101J
R 290	(B,89,94)	RS1/16S101J
R 291	(A,98,73)	RS1/16S473J
R 292	(A,98,74)	RS1/16S473J
R 293	(A,98,71)	RS1/16S682J
R 294	(A,98,76)	RS1/16S682J
R 295	(A,101,71)	RS1/16S682J
R 296	(A,101,76)	RS1/16S682J
R 297	(B,100,68)	RS1/16S102J
R 298	(B,103,71)	RS1/16S102J
R 299	(B,102,74)	RS1/16S101J
R 300	(B,89,70)	RS1/16S101J
R 301	(A,98,83)	RS1/16S473J
R 302	(A,98,85)	RS1/16S473J
R 303	(A,98,82)	RS1/16S682J
R 304	(A,98,86)	RS1/16S682J
R 305	(A,101,82)	RS1/16S682J
R 306	(A,101,86)	RS1/16S682J
R 307	(B,100,79)	RS1/16S102J
R 308	(B,103,83)	RS1/16S102J
R 309	(B,102,86)	RS1/16S101J
R 310	(B,89,82)	RS1/16S101J
R 321	(B,151,128)	RS1/16S470J
R 322	(B,149,125)	RS1/16S470J
R 323	(A,157,131)	RS1/16S223J
R 324	(A,154,128)	RS1/16S223J
R 325	(B,145,126)	RS1/16S470J
R 326	(B,139,126)	RS1/16S470J
R 327	(A,151,127)	RS1/16S223J
R 328	(A,145,127)	RS1/16S223J
R 329	(B,136,128)	RS1/16S470J
R 330	(B,136,134)	RS1/16S470J
R 331	(A,142,127)	RS1/16S223J
R 332	(A,134,130)	RS1/16S223J
R 333	(A,145,118)	RS1/16S102J
R 351	(B,99,147)	RS1/16S103J
R 352	(A,125,121)	RS1/16S103J
R 353	(A,125,126)	RS1/16S103J
R 354	(A,122,125)	RS1/16S331J
R 371	(B,91,108)	RS1/16S0R0J
R 372	(B,100,110)	RS1/16S473J
R 373	(B,130,78)	RS1/16S104J
R 391	(A,39,54)	RS1/16S103J
R 392	(A,40,65)	RS1/16S223J
R 393	(A,38,65)	RS1/16S103J
R 394	(A,37,65)	RS1/16S473J
R 405	(B,167,114)	RS1/16S681J
R 406	(B,173,130)	RS1/16S681J
R 407	(B,173,132)	RS1/16S681J
R 408	(B,173,134)	RS1/16S681J
R 409	(B,173,136)	RS1/16S681J
R 410	(B,174,140)	RS1/16S681J
R 431	(A,48,103)	RS1/16S103J
R 432	(A,48,105)	RS1/16S103J
R 441	(B,44,131)	RS1/16S223J
R 442	(B,51,131)	RS1/16S223J
R 443	(B,44,127)	RS1/16S103J
R 444	(B,51,127)	RS1/16S103J
R 445	(B,42,131)	RS1/16S103J
R 446	(B,53,131)	RS1/16S103J
R 447	(A,40,121)	RS1/16S103J
R 448	(A,40,119)	RS1/16S103J
R 449	(A,39,123)	RS1/16S103J
R 450	(A,52,122)	RS1/16S103J
R 451	(A,45,116)	RS1/16S104J
R 452	(A,47,117)	RS1/16S104J
R 501	(B,95,24)	RS1/16S681J
R 502	(B,95,26)	RS1/16S681J
R 503	(B,89,31)	RAB4C681J

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
R 511	(B,65,49)	RS1/16S182J	R 754	(B,135,37)	RS1/16S471J
R 512	(B,82,40)	RAB4C681J	R 755	(B,133,48)	RS1/16S273J
R 513	(B,65,51)	RS1/16S332J	R 757	(B,121,31)	RS1/16S104J
R 514	(B,61,51)	RS1/16S332J	R 758	(B,119,35)	RS1/16S222J
R 515	(B,89,40)	RAB4C681J	R 759	(B,120,38)	RS1/16S471J
R 516	(B,65,53)	RS1/16S182J	R 760	(B,120,28)	RS1/16S471J
R 521	(B,82,31)	RAB4C101J	R 761	(B,115,39)	RS1/16S473J
R 522	(B,88,25)	RS1/16S101J	R 762	(B,112,40)	RS1/16S473J
R 523	(B,88,23)	RS1/16S101J	R 763	(B,118,52)	RS1/16S103J
R 531	(B,51,42)	RS1/16S223J	R 764	(B,129,53)	RS1/16S103J
R 532	(B,49,43)	RS1/16S102J	R 765	(B,112,46)	RS1/16S473J
R 552	(B,45,69)	RS1/16S0R0J	R 766	(B,112,44)	RS1/16S473J
R 554	(B,43,69)	RS1/16S102J	R 767	(B,120,52)	RS1/16S472J
R 555	(B,41,51)	RS1/16S220J	R 768	(B,118,47)	RS1/16S103J
R 556	(B,53,49)	RS1/16S102J	R 769	(B,124,51)	RS1/16S682J
R 557	(B,48,54)	RS1/16S0R0J	R 770	(B,136,34)	RS1/16S333J
R 601	(B,131,87)	RS1/16S104J	R 771	(B,136,30)	RS1/16S332J
R 603	(B,131,85)	RS1/16S104J	R 773	(B,117,50)	RS1/16S0R0J
R 605	(B,131,83)	RS1/16S104J	R 774	(B,128,30)	RS1/16S473J
R 606	(A,139,81)	RS1/16S102J	R 775	(B,130,38)	RS1/16S473J
R 607	(B,132,73)	RS1/16S104J	R 776	(B,139,27)	RS1/16S473J
R 608	(A,126,82)	RS1/16S104J	R 777	(B,140,30)	RS1/16S473J
R 609	(A,119,71)	RS1/16S102J	R 791	(B,107,69)	RS1/16S122J
R 611	(B,141,83)	RS1/16S472J	R 792	(A,54,105)	RS1/16S821J
R 613	(B,140,85)	RS1/16S472J	R 793	(A,39,94)	RS1/16S152J
R 615	(B,135,65)	RS1/16S104J	R 801	(A,152,42)	RS1/16S102J
R 616	(B,135,69)	RS1/16S104J	R 802	(A,142,42)	RS1/16S102J
R 617	(A,142,53)	RAB4C104J	R 803	(B,149,38)	RS1/16S103J
R 619	(B,146,66)	RS1/16S0R0J	R 804	(B,143,41)	RS1/16S563J
R 621	(A,119,60)	RAB4C104J	R 806	(B,152,42)	RS1/16S102J
R 625	(A,119,69)	RS1/16S104J	R 807	(A,151,18)	RS1/4SA102J
R 627	(A,134,82)	RAB4C681J	R 808	(B,152,38)	RS1/16S102J
R 628	(A,131,81)	RS1/16S681J	R 811	(B,110,26)	RS1/16S222J
R 629	(B,127,78)	RS1/16S681J	R 812	(B,112,18)	RS1/16S222J
R 631	(A,116,64)	RS1/16S104J	R 813	(B,110,28)	RS1/16S222J
R 632	(A,131,52)	RS1/16S104J	R 814	(B,115,17)	RS1/16S222J
R 633	(B,136,57)	RS1/16S104J	R 815	(A,116,27)	RS1/16S222J
R 640	(A,120,55)	RS1/16S0R0J	R 816	(B,117,17)	RS1/16S222J
R 652	(A,149,76)	RS1/16S104J	R 817	(B,120,17)	RS1/16S222J
R 661	(B,155,49)	RS1/16S222J	R 818	(A,118,27)	RS1/16S222J
R 662	(A,153,59)	RS1/16S102J	R 819	(A,120,27)	RS1/16S104J
R 664	(B,155,53)	RS1/16S473J	R 820	(B,107,21)	RS1/16S223J
R 665	(A,156,61)	RS1/16S183J	R 821	(B,109,12)	RS1/16S473J
R 681	(B,149,50)	RS1/16S102J	R 831	(B,70,15)	RS1/16S472J
R 701	(B,96,43)	RS1/16S682J	R 832	(B,72,27)	RS1/16S821J
R 702	(B,96,47)	RS1/16S682J	R 833	(B,80,23)	RS1/16S222J
R 703	(A,98,47)	RS1/16S682J	R 841	(A,39,24)	RS1/16S1R0J
R 704	(A,98,50)	RS1/16S682J	R 842	(A,37,33)	RS1/4SA271J
R 705	(B,96,51)	RS1/16S221J	R 851	(B,63,27)	RS1/16S1R0J
R 706	(B,108,49)	RS1/16S221J	R 852	(B,59,20)	RS1/4SA391J
R 707	(B,96,49)	RS1/16S221J	R 853	(A,134,34)	RS1/16S562J
R 708	(B,108,47)	RS1/16S221J	R 854	(A,132,37)	RS1/16S103J
R 709	(B,96,45)	RS1/16S221J	R 855	(A,89,16)	RS1/16S151J
R 710	(B,108,45)	RS1/16S681J	R 901	(B,22,56)	RS1/16S223J
R 711	(B,106,40)	RS1/16S473J	R 902	(A,36,50)	RS1/16S272J
R 712	(A,116,69)	RS1/16S104J	R 911	(A,22,116)	RS1/16S821J
R 721	(B,24,65)	RS1/4SA391J	R 921	(B,16,85)	RS1/16S821J
R 751	(B,135,39)	RS1/16S393J	R 931	(A,69,116)	RS1/16S104J
R 752	(B,129,51)	RS1/16S104J	R 932	(A,75,118)	RS1/16S103J
R 753	(B,135,41)	RS1/16S472J	R 933	(B,70,121)	RS1/16S473J

Circuit Symbol and No.		Part No.
R 934	(B,68,121)	RS1/16S473J
R 935	(B,72,121)	RS1/16S472J
R 941	(A,82,118)	RS1/16S103J
R 951	(A,91,119)	RS1/16S102J
R 952	(A,89,121)	RS1/16S472J
R 953	(A,92,124)	RS1/16S472J
R 954	(A,90,124)	RS1/16S153J
R 971	(A,52,119)	RS1/16S391J
R 972	(B,65,120)	RS1/16S1R0J
R 981	(B,79,112)	RS1/16S102J
R 982	(B,82,111)	RS1/16S153J
R 983	(B,75,118)	RS1/16S102J

CAPACITORS

C 101	(B,34,134)	CKSRYB104K16
C 102	(B,35,144)	CKSRYB102K50
C 103	(B,39,144)	CKSRYB102K50
C 121	(A,114,106)	CKSQYB225K10
C 122	(A,114,104)	CKSQYB225K10
C 123	(A,114,108)	CKSQYB225K10
C 124	(A,114,102)	CKSQYB225K10
C 125	(A,120,106)	CKSRYB105K10
C 126	(A,120,104)	CKSRYB105K10
C 127	(A,120,102)	CKSRYB104K16
C 128	(A,120,101)	CKSRYB104K16
C 129	(A,120,94)	CEJQ4R7M35
C 130	(A,126,94)	CEJQ4R7M35
C 131	(A,117,98)	CKSQYB225K10
C 132	(A,114,113)	CKSYB475K10
C 133	(A,114,111)	CKSYB475K10
C 134	(A,127,113)	CKSRYB105K10
C 135	(A,130,113)	CKSRYB105K10
C 136	(A,122,117)	CEJQ470M10
C 137	(A,129,117)	CEJQ470M10
C 138	(A,107,90)	CKSRYB104K16
C 139	(B,119,111)	CKSRYB105K10
C 151	(B,129,113)	CKSRYB105K10
C 181	(A,100,130)	CCSRCH681J50
C 182	(A,105,124)	CKSQYB225K10
C 183	(A,111,123)	CEJQ101M6R3
C 201	(B,54,81)	CKSRYB104K16
C 202	(B,56,82)	CKSRYB682K50
C 203	(B,56,76)	CKSRYB104K16
C 204	(B,54,74)	CKSRYB104K16
C 205	(A,51,83)	CEJQ100M16
C 206	(A,51,77)	CEJQ100M16
C 207	(A,51,72)	CEJQ100M16
C 208	(B,58,84)	CKSRYB104K16
C 209	(B,57,87)	CCSRCH8R0D50
C 210	(B,62,76)	CKSRYB104K16
C 211	(B,62,87)	CCSRCH8R0D50
C 212	(B,63,79)	CKSRYB104K16
C 213	(B,64,75)	CKSRYB104K16
C 214	(B,63,82)	CCSRCH680J50
C 215	(B,65,79)	CKSRYB104K16
C 216	(B,68,67)	CCSRCH680J50
C 217	(B,50,88)	CKSYB106K6R3
C 220	(B,65,94)	CKSRYB103K50
C 221	(B,81,86)	CCSRCH101J50

Circuit Symbol and No.		Part No.
C 224	(A,81,77)	CEVW100M10
C 225	(A,83,83)	CKSRYB104K16
C 226	(A,87,77)	CSZS100M16
C 227	(A,84,83)	CKSRYB104K16
C 228	(A,93,87)	CEVW100M10
C 229	(A,93,81)	CEVW100M10
C 230	(A,93,76)	CEVW100M10
C 231	(A,93,70)	CEVW100M10
C 232	(A,93,98)	CEVW100M10
C 233	(A,93,92)	CEVW100M10
C 240	(B,82,96)	CCSRCH220J50
C 241	(B,69,96)	CCSRCH220J50
C 242	(B,86,95)	CKSRYB104K16
C 243	(B,66,71)	CKSRYB332K50
C 244	(A,73,79)	CKSYB106K6R3
C 245	(A,73,74)	CKSYB106K6R3
C 246	(B,58,70)	CKSRYB332K50
C 247	(B,70,86)	CKSYB106K6R3
C 250	(A,73,69)	CKSYB106K6R3
C 251	(A,74,63)	CKSYB106K6R3
C 252	(B,78,48)	CKSRYB104K16
C 261	(A,56,68)	CKSRYB104K16
C 262	(A,98,66)	CKSRYB104K16
C 272	(A,81,69)	CCSRCH560J50
C 273	(A,85,70)	CKSRYB103K50
C 281	(A,98,91)	CCSRCH681J50
C 282	(A,98,99)	CCSRCH681J50
C 283	(A,101,94)	CCSRCH331J50
C 284	(A,101,96)	CCSRCH331J50
C 285	(B,96,89)	CKSRYB105K10
C 286	(B,104,98)	CKSRYB105K10
C 287	(B,95,100)	CKSRYB104K16
C 291	(A,98,70)	CCSRCH681J50
C 292	(A,98,77)	CCSRCH681J50
C 293	(A,101,73)	CCSRCH331J50
C 294	(A,101,74)	CCSRCH331J50
C 295	(B,96,68)	CKSRYB105K10
C 296	(B,104,74)	CKSRYB105K10
C 297	(B,89,76)	CKSRYB104K16
C 301	(A,98,80)	CCSRCH681J50
C 302	(A,98,88)	CCSRCH681J50
C 303	(A,101,83)	CCSRCH331J50
C 304	(A,101,85)	CCSRCH331J50
C 305	(B,96,79)	CKSRYB105K10
C 306	(B,104,86)	CKSRYB105K10
C 307	(B,89,87)	CKSRYB104K16
C 321	(A,153,122)	CEJQNP100M10
C 322	(A,147,122)	CEJQNP100M10
C 323	(A,140,122)	CEJQNP100M10
C 324	(A,134,122)	CEJQNP100M10
C 325	(A,130,127)	CEJQNP100M10
C 326	(A,131,133)	CEJQNP100M10
C 327	(A,154,134)	CKSRYB102K50
C 328	(A,149,115)	CEJQ220M16
C 351	(B,129,123)	CKSQYB474K16
C 352	(B,124,124)	CKSQYB474K16
C 353	(B,126,123)	CKSQYB474K16
C 354	(B,122,124)	CKSQYB474K16
C 355	(A,117,122)	CEJQ330M10
C 357	(A,86,125) 3 300 µF/16 V	CCH1486

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
C 358	(B,95,140)	CKSRYB104K25	C 722	(B,29,67)	CKSRYB102K50
C 359	(A,124,130)	CEHAR100M16	C 723	(A,29,65)	CEJQ101M10
C 360	(A,124,135)	CKSQYB225K10	C 743	(A,96,54)	CEJQ101M10
C 361	(A,126,135)	CKSQYB225K10	C 751	(A,138,41)	CEJQ4R7M35
C 363	(B,122,140)	CKSRYB474K10	C 752	(A,138,46)	CEJQ1R0M50
C 364	(B,121,135)	CKSRYB474K10	C 753	(A,138,35)	CEJQ4R7M35
C 365	(B,122,138)	CKSRYB474K10	C 754	(B,112,38)	CKSRYB104K16
C 366	(B,121,133)	CKSRYB474K10	C 755	(B,119,31)	CKSRYB102K50
C 371	(B,94,112)	CKSRYB104K16	C 756	(B,121,35)	CCSRCH101J50
C 372	(B,99,112)	CKSRYB104K16	C 758	(B,134,30)	CKSRYB105K10
C 373	(B,99,108)	CKSRYB104K16	C 759	(B,124,53)	CKSRYB104K16
C 374	(A,110,116)	CEAL100M16	C 760	(B,122,39)	CKSRYB104K16
C 378	(B,98,114)	CKSRYB105K10	C 761	(B,128,28)	CKSRYB104K16
C 401	(B,173,109)	CKSRYB103K50	C 762	(B,118,45)	CKSRYB472K50
C 402	(B,156,111)	CKSRYB102K50	C 763	(B,119,49)	CKSRYB102K50
C 403	(A,160,111)	CEJQ470M10	C 764	(B,112,48)	CKSRYB104K16
C 404	(B,167,110)	CKSYB475K10	C 765	(B,134,34)	CKSRYB471K50
C 405	(B,174,142)	CKSRYB103K50	C 768	(B,138,30)	CKSRYB104K16
C 406	(A,160,118)	CEJQ101M10	C 769	(B,75,112)	CKSRYB153K50
C 408	(B,160,114)	CKSRYB102K50	C 791	(B,115,71)	CKSRYB103K50
C 421	(A,161,96)	CEJQ220M16	C 792	(A,66,107)	CEJQ470M10
C 422	(B,157,93)	CKSRYB103K50	C 793	(B,75,109)	CKSRYB103K50
C 423	(B,156,83)	CKSYB475K10	C 794	(A,79,106)	CCH1325
C 424	(B,135,97)	CKSRYB103K50	C 795	(A,71,111)	CEJQ101M10
C 431	(A,48,112)	CKSRYB104K16	C 796	(A,44,90)	CKSRYB103K50
C 432	(A,33,117)	CKSQYB105K16	C 801	(B,143,43)	CKSRYB103K50
C 433	(A,36,118)	CKSQYB105K16	C 802	(B,153,32)	CKSRYB102K50
C 441	(B,42,127)	CKSQYB225K10	C 803	(A,142,37)	CCSRCH101J50
C 442	(B,53,127)	CKSQYB225K10	C 804	(A,152,37)	CCSRCH101J50
C 443	(B,43,123)	CKSQYB225K10	C 806	(B,156,27)	CKSRYB102K50
C 444	(B,50,123)	CKSQYB225K10	C 807	(A,157,20)	CKSRYB104K16
C 445	(A,41,123)	CCSRCH101J50	C 808	(A,154,24)	CEVW220M16
C 446	(A,51,122)	CCSRCH101J50	C 831	(B,80,21)	CKSRYB104K16
C 447	(A,45,118)	CKSRYB105K10	C 832	(A,76,11)	CEVW470M10
C 448	(A,40,115)	CEVW100M10	C 841	(A,57,12)	CEVW470M16
C 501	(B,99,22)	CKSRYB104K16	C 842	(B,37,37)	CKSRYB104K16
C 511	(B,94,37)	CKSRYB104K16	C 843	(B,36,31)	CKSRYB102K50
C 521	(B,84,18)	CKSRYB104K16	C 844	(A,36,29)	CEJQ330M16
C 554	(A,46,63)	CEJQ330M10	C 851	(B,65,15)	CKSRYB473K25
C 560	(B,46,54)	CKSRYB102K50	C 852	(A,92,14)	CKSRYB104K16
C 561	(A,51,66)	CEJQ220M16	C 861	(A,61,97)	CKSRYB105K6R3
C 562	(B,63,43)	CKSRYB103K50	C 862	(A,61,99)	CKSRYB103K50
C 563	(B,63,33)	CKSYB475K10	C 863	(A,68,98)	CKSRYB104K16
C 566	(B,45,37)	CKSRYB104K16	C 871	(A,43,75)	CKSRYB104K16
C 567	(B,55,40)	CKSRYB103K50	C 873	(A,41,79)	CEVW101M6R3
C 568	(B,55,38)	CKSRYB105K6R3	C 875	(A,38,85)	CKSRYB105K10
C 601	(A,128,83)	CKSRYB104K16	C 877	(A,49,99)	CEVW101M6R3
C 602	(A,140,84)	CKSRYB104K16	C 878	(A,55,100)	CKSRYB103K50
C 603	(A,124,83)	CKSRYB104K16	C 879	(B,49,98)	CKSYB475K10
C 605	(B,137,89)	CKSRYB103K50	C 901	(A,27,47) 2 200 µF/16 V	CCH1405
C 606	(A,134,90)	CEJQ4R7M35	C 903	(B,28,62)	CKSRYB472K50
C 607	(B,151,68)	CCSRCH7R0D50	C 904	(B,28,52)	CKSRYB103K50
C 608	(B,151,64)	CCSRCH7R0D50	C 905	(A,28,54)	CEJQ470M10
C 610	(A,118,65)	CKSRYB104K16	C 911	(A,32,109)	CEJQ221M10
C 611	(A,138,53)	CKSRYB104K16	C 912	(B,13,117)	CKSRYB103K50
C 612	(A,134,54)	CKSRYB104K16	C 913	(A,13,120)	CEJQ101M10
C 613	(B,134,78)	CCSRCH331J50	C 921	(A,31,99) 470 µF/16 V	CCH1325
C 662	(B,155,51)	CKSRYB104K16	C 922	(B,30,81)	CKSRYB103K50
C 663	(A,156,59)	CKSRYB105K10	C 923	(A,30,77)	CEJQ101M10
C 721	(B,30,74)	CKSRYB473K25	C 932	(B,74,121)	CKSRYB104K16

Circuit Symbol and No.		Part No.
C 941	(A,83,114)	CKSQYB105K16
C 963	(A,77,135)	CKSQYB105K10
C 964	(B,74,132)	CKSQYB105K16
C 965	(B,72,132)	CKSQYB105K16
C 966	(B,73,145)	CKSQYB105K16
C 967	(A,74,135)	CKSQYB105K16
C 968	(A,72,135)	CKSQYB105K16
C 969	(A,69,135)	CKSQYB105K16
C 971	(B,63,112)	CKSRYB103K50
C 972	(B,62,116)	CKSRYB103K50
C 973	(A,64,116)	CEJQ100M16
C 981	(B,82,113)	CKSRYB104K16

B

Unit Number :

Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1702	(B,145,31) IC	NJM2870F18
IC 1703	(B,130,15) IC	S-818A33AUC-BGN
IC 1761	(A,96,34) IC	TC7WT125FU
IC 1762	(A,129,37) IC	TC7WH34FU
IC 1763	(B,97,26) IC	PEG182A
IC 1764	(A,121,31) IC	TC7WH32FU
IC 1801	(A,15,35)	GP1UX51RK
IC 1831	(A,157,27) IC(P980BT/XN/UC)	PD8162A
IC 1831	(A,157,27) IC (P9800BT/XN/UC,P9850BT/XN/ES)	PD8161A
IC 1832	(A,140,21) IC	PD6544A
IC 1833	(A,97,19) IC	M5M5V216ATP-70HI
IC 1861	(A,123,19) IC	S1D13702F00A100
Q 1731	(B,10,38) Transistor	DTC114EU
D 1701	(A,122,37) Diode	DAP202U
D 1702	(A,119,37) Diode	DAN202U
D 1703	(A,114,37) Diode	DAP202U
D 1704	(A,112,37) Diode	DAN202U
D 1731	(A,8,33) LED	SML412BC5T(MN)
D 1732	(A,65,24) LED	SML412BC5T(MN)
D 1733	(A,50,38) LED	SML412BC5T(MN)
D 1734	(A,36,24) LED	SML412BC5T(MN)
D 1735	(A,50,9) LED	SML412BC5T(MN)
D 1736	(A,67,34) LED	SML412BC5T(MN)
D 1737	(A,67,14) LED	SML412BC5T(MN)
D 1738	(A,33,34) LED	SML412BC5T(MN)
D 1739	(A,33,14) LED	SML412BC5T(MN)
D 1740	(A,17,24) LED	SML412BC5T(MN)
D 1741	(A,9,11) LED	SML412BC5T(MN)
D 1751	(B,40,16) Diode	HZU7R5(B2)
D 1752	(B,66,17) Diode	DAP202U
D 1753	(B,66,22) Diode	DAN202U
D 1759	(B,36,16) Diode	HZU7R5(B2)
D 1761	(A,103,36) Diode	1SS355
L 1701	(B,121,19) Inductor	CTF1379
L 1702	(B,124,21) Inductor	CTF1379
L 1703	(B,143,23) Inductor	CTF1617
L 1762	(B,144,16) Inductor	CTF1617
L 1861	(B,159,19) Inductor	CTF1617
L 1862	(A,113,14) Inductor	LCTC1R0K2125
L 1863	(A,126,7) Inductor	LCTC1R0K2125

Circuit Symbol and No.		Part No.
L 1931	(B,122,11) Inductor	CTF1617
L 1932	(B,123,15)Chip Ferrite Bead	CTF1399
L 1933	(B,149,15) Inductor	ATH1167
X 1761	(A,109,27) 8.0 MHz	CSS1675
S 1701	(A,163,6) Push Switch	CSG1155
S 1731	(A,8,27) Push Switch	CSG1155
S 1732	(A,35,39) Push Switch	CSG1155
S 1733	(A,50,24)Switch(MULTI-CONTROL)	CSX1065
S 1734	(A,35,9) Push Switch	CSG1155
S 1735	(A,65,39) Push Switch	CSG1155
S 1736	(A,65,9) Push Switch	CSG1155
S 1737	(A,17,27) Push Switch	CSG1155
S 1738	(A,6,11) Push Switch	CSG1155
S 1739	(A,26,27) Push Switch	CSG1155
	OEL Module	MXK8230

RESISTORS

R 1703	(B,118,18)	RS1/16S103J
R 1704	(A,124,36)	RS1/16S222J
R 1705	(A,125,37)	RS1/16S222J
R 1706	(A,157,7)	RS1/16S333J
R 1707	(A,114,34)	RS1/16S222J
R 1708	(A,110,31)	RS1/16S222J
R 1709	(A,117,37)	RS1/16S103J
R 1731	(B,11,31)	RS1/16S101J
R 1733	(B,63,34)	RS1/16S102J
R 1734	(B,35,32)	RS1/16S102J
R 1735	(B,42,11)	RS1/16S222J
R 1737	(B,54,26)	RS1/16S332J
R 1738	(B,42,13)	RS1/16S103J
R 1739	(B,65,34)	RS1/16S103J
R 1740	(B,38,32)	RS1/16S822J
R 1741	(B,38,30)	RS1/16S473J
R 1742	(B,51,39)	RS1/16S181J
R 1743	(B,50,8)	RS1/16S181J
R 1744	(B,61,7)	RS1/16S181J
R 1745	(B,35,8)	RS1/16S181J
R 1746	(B,50,39)	RS1/16S151J
R 1747	(B,49,8)	RS1/16S151J
R 1748	(B,60,7)	RS1/16S101J
R 1749	(B,36,8)	RS1/16S181J
R 1750	(B,12,17)	RS1/16S271J
R 1751	(B,11,17)	RS1/16S331J
R 1752	(B,11,11)	RS1/16S561J
R 1753	(B,10,11)	RS1/16S331J
R 1761	(A,100,35)	RS1/16S473J
R 1762	(A,97,31)	RS1/16S473J
R 1763	(A,98,29)	RS1/16S682J
R 1764	(A,103,29)	RS1/16S682J
R 1765	(A,104,33)	RS1/16S154J
R 1766	(A,101,29)	RS1/16S392J
R 1767	(A,99,29)	RS1/16S392J
R 1768	(A,107,33)	RS1/16S473J
R 1769	(B,108,22)	RAB4CQ101J
R 1770	(B,108,31)	RAB4CQ101J
R 1771	(A,101,33)	RS1/16S473J
R 1772	(B,108,28)	RS1/16S101J
R 1773	(B,107,37)	RS1/16S101J
R 1775	(B,79,7)	RAB4CQ101J
R 1776	(B,105,37)	RS1/16S101J

Circuit Symbol and No.		Part No.
R 1777	(A,86,37)	RAB4CQ473J
R 1778	(A,91,31)	RS1/16S101J
R 1779	(A,92,35)	RS1/16S473J
R 1780	(A,91,33)	RS1/16S101J
R 1781	(B,99,37)	RAB4CQ101J
R 1782	(B,99,16)	RS1/16S473J
R 1783	(B,97,16)	RS1/16S473J
R 1784	(B,95,16)	RS1/16S101J
R 1785	(A,83,34)	RAB4CQ101J
R 1786	(B,82,35)	RAB4CQ101J
R 1787	(B,85,33)	RAB4CQ101J
R 1789	(B,85,16)	RAB4CQ101J
R 1790	(B,80,18)	RS1/16S101J
R 1791	(B,80,16)	RS1/16S101J
R 1793	(B,82,31)	RAB4CQ101J
R 1794	(B,85,28)	RAB4CQ101J
R 1795	(B,82,27)	RAB4CQ101J
R 1796	(B,82,21)	RAB4CQ101J
R 1797	(B,85,20)	RAB4CQ101J
R 1798	(B,79,10)	RAB4CQ101J
R 1799	(A,128,33)	RS1/16S0R0J
R 1804	(B,108,20)	RS1/16S101J
R 1811	(B,19,30)	RS1/16S101J
R 1812	(B,24,34)	RS1/16S103J
R 1813	(B,22,37)	RS1/16S2R2J
R 1831	(A,129,7)	RS1/16S473J
R 1832	(A,132,7)	RS1/16S101J
R 1833	(A,133,11)	RS1/16S473J
R 1834	(A,134,33)	RS1/16S473J
R 1835	(A,154,13)	RS1/16S471J
R 1836	(A,150,13)	RS1/16S471J
R 1864	(A,133,17)	RS1/16S473J
R 1865	(A,132,19)	RS1/16S473J
R 1866	(A,132,27)	RS1/16S101J
R 1869	(A,113,10)	RS1/16S102J
R 1870	(A,132,22)	RS1/16S102J
R 1871	(A,128,29)	RS1/16S102J
R 1872	(A,130,28)	RS1/16S102J
R 1873	(A,132,21)	RS1/16S102J
R 1874	(A,110,10)	RS1/16S102J
R 1931	(B,113,16)	RS1/16S101J
R 1932	(B,112,16)	RS1/16S101J
R 1933	(B,109,16)	RS1/16S101J
R 1934	(B,107,16)	RAB4CQ101J

CAPACITORS

C 1707	(B,129,21)	CKSRYB474K10
C 1708	(B,143,30)	CKSRYB474K10
C 1709	(B,148,32)	CKSRYB223K50
C 1710	(B,137,15)	CSZS4R7M10
C 1711	(B,151,30)	CSZS4R7M10
C 1732	(A,67,24)	CKSRYB104K16
C 1735	(A,34,24)	CKSRYB104K16
C 1739	(A,10,35)	CKSRYB104K16
C 1741	(A,50,40)	CKSRYB104K16
C 1744	(A,50,7)	CKSRYB104K16
C 1746	(A,16,20)	CKSRYB104K16
C 1747	(A,11,11)	CKSRYB104K16
C 1748	(B,62,26)	CKSRYB103K50
C 1749	(B,35,33)	CKSRYB103K50
C 1750	(A,67,32)	CKSRYB104K16
C 1751	(A,67,15)	CKSRYB104K16
C 1752	(A,33,32)	CKSRYB104K16
C 1753	(A,33,15)	CKSRYB104K16
C 1761	(A,97,37)	CKSRYB104K16
C 1762	(A,101,37)	CKSRYB104K16
C 1763	(A,101,35)	CKSRYB473K25
C 1764	(A,135,38)	CKSRYB104K16
C 1765	(B,103,37)	CKSRYB103K50
C 1766	(B,141,16)	CKSRYB104K16
C 1767	(B,90,18)	CKSRYB104K16
C 1768	(B,135,11)	CKSRYB103K50
C 1769	(B,140,11)	CSZS4R7M10
C 1770	(A,126,34)	CKSRYB104K16
C 1801	(B,22,34)	CSZS100M16
C 1831	(A,148,26)	CKSRYB104K16
C 1832	(A,96,11)	CKSRYB104K16
C 1833	(B,161,40)	CKSRYB104K16
C 1834	(A,156,15)	CCSRCH100D50
C 1835	(B,139,13)	CCSRCH100D50
C 1862	(B,159,16)	CKSRYB103K50
C 1863	(B,161,10)	CSZS4R7M10
C 1864	(A,114,14)	CKSRYB104K16
C 1865	(A,132,15)	CKSRYB473K25
C 1867	(A,117,27)	CKSRYB104K16
C 1868	(A,132,25)	CKSRYB104K16
C 1869	(A,130,11)	CKSRYB104K16
C 1870	(A,132,13)	CKSRYB104K16
C 1871	(A,126,29)	CCSRCH100D50
C 1872	(A,130,30)	CCSRCH100D50
C 1873	(A,132,24)	CCSRCH100D50
C 1874	(A,109,14)	CKSYB106K10
C 1932	(B,118,11)	CKSRYB103K50
C 1933	(B,117,13)	CKSRYB104K16
C 1936	(B,117,15)	CKSRYB104K16
C 1937	(B,93,11)	CKSRYB104K16
C 1939	(B,154,15)	CKSYB106K10
C 1941	(B,131,8)	CKSYB106K10

C

Unit Number : CWX3328
Unit Name : CD Core Unit(COMP1D)

MISCELLANEOUS

IC 201	(B,39,70)	IC	UPD63763CGJ
IC 203	(A,12,16)	IC	NJM2886DL3-33
IC 301	(A,28,18)	IC	BA5835FP
IC 701	(A,32,48)	IC	PE5552A
Q 101	(B,60,89)	Transistor	2SA1577
Q 701	(B,24,41)	Transistor	UN2111
X 701	(A,24,37)	Ceramic Resonator 4.000 MHz	CSS1652
S 901	(A,57,57)	Switch(HOME)	CSN1067
S 903	(B,23,78)	Switch(DSCSNS)	CSN1067
S 904	(B,42,87)	Switch(12EJ)	CSN1068
S 905	(B,28,88)	Switch(8EJ)	CSN1068

RESISTORS

Circuit Symbol and No.		Part No.
R 101	(B,61,92)	RS1/10SR2R4J
R 102	(B,63,92)	RS1/10SR2R4J
R 103	(B,63,89)	RS1/10SR2R7J
R 104	(A,52,73)	RS1/16SS102J
R 201	(B,44,57)	RS1/16SS102J
R 202	(A,38,62)	RS1/16SS473J
R 203	(A,37,62)	RS1/16SS473J
R 210	(A,33,62)	RS1/16SS0R0J
R 214	(A,46,79)	RS1/16SS472J
R 216	(A,46,81)	RS1/16SS472J
R 221	(A,44,81)	RS1/16SS103J
R 222	(A,45,81)	RS1/16SS103J
R 225	(B,52,78)	RS1/16SS103J
R 226	(B,52,77)	RS1/16SS393J
R 227	(A,44,75)	RS1/16SS562J
R 228	(A,46,72)	RS1/16SS122J
R 229	(A,44,72)	RS1/16SS472J
R 232	(A,46,75)	RS1/16SS122J
R 237	(B,22,64)	RS1/16SS221J
R 238	(B,22,65)	RS1/16SS221J
R 239	(B,22,66)	RS1/16SS221J
R 241	(B,26,63)	RS1/16SS333J
R 243	(B,26,62)	RS1/16SS333J
R 245	(B,26,69)	RS1/16SS333J
R 248	(B,55,74)	RS1/16SS105J
R 307	(A,19,20)	RS1/16SS183J
R 308	(A,17,20)	RS1/16SS183J
R 309	(A,18,18)	RS1/16SS183J
R 310	(A,17,16)	RS1/16SS183J
R 701	(B,26,44)	RS1/16SS221J
R 707	(B,32,45)	RS1/16SS473J
R 709	(A,36,35)	RS1/16SS222J
R 710	(B,41,46)	RS1/16SS102J
R 712	(A,45,57)	RS1/16SS222J
R 713	(B,40,57)	RS1/16SS222J
R 716	(B,29,37)	RS1/16SS472J
R 724	(B,31,36)	RS1/16S473J
R 726	(B,23,47)	RS1/16SS103J
R 727	(B,31,42)	RS1/16SS473J
R 729	(B,20,48)	RS1/16SS223J
R 730	(B,20,46)	RS1/16SS473J
R 740	(A,38,59)	RS1/16SS222J
R 746	(A,13,38)	RS1/16SS104J
R 750	(A,40,66)	RS1/16SS473J
R 751	(B,40,46)	RS1/16SS102J
R 902	(A,20,36)	RS1/16SS221J
R 905	(A,21,36)	RS1/16SS221J
R 906	(B,20,36)	RS1/16SS221J
R 909	(B,16,65)	RS1/16SS0R0J

CAPACITORS

C 103	(B,57,83)	CEVW101M16
C 108	(A,47,66)	CKSSYB104K10
C 201	(B,46,56)	CKSSYB102K50
C 202	(B,47,58)	CKSSYB104K10
C 205	(A,34,63)	CKSSYB104K10
C 208	(B,34,54)	CKSSYB104K10
C 209	(B,31,57)	CKSSYB104K10
C 210	(A,31,66)	CKSRYB105K10
C 216	(B,53,77)	CKSSYB332K50
C 217	(B,52,79)	CKSSYB104K10
C 218	(B,52,76)	CKSSYB473K10
C 219	(B,52,74)	CKSSYB104K10
C 220	(A,46,77)	CKSSYB182K50
C 221	(B,51,74)	CKSSYB104K10
C 222	(A,46,73)	CCSSCH560J50
C 223	(A,44,74)	CCSSCH4R0C50
C 224	(B,52,68)	CKSSYB104K10
C 225	(A,47,67)	CKSSYB103K16
C 226	(A,49,67)	CCSSCH680J50
C 227	(A,48,65)	CCSSCH470J50
C 228	(A,46,62)	CKSSYB103K16
C 232	(A,12,31)	CKSRYB105K10
C 237	(A,31,67)	CKSSYB104K10
C 239	(A,46,74)	CCSSCH220J50
C 246	(A,42,80)	CKSSYB104K10
C 249	(B,25,57)	CKSSYB221K50
C 250	(A,42,81)	CKSRYB102K50
C 251	(A,41,83)	CKSRYB102K50
C 303	(A,18,20)	CKSSYB472K25
C 304	(A,17,17)	CKSSYB103K16
C 307	(A,34,15)	CKSSYB104K10
C 308	(A,17,30)	CKSRYB105K10
C 701	(B,25,47)	CKSSYB104K10
C 703	(B,28,42)	CKSSYB103K16
C 706	(B,34,43)	CKSSYB104K10
C 707	(A,36,57)	CKSSYB104K10
C 714	(A,24,41)	CKSSYB104K10
C 722	(B,29,45)	CKSQYB475K6R3
C 903	(B,14,54)	CKSSYB471K50

D

Unit Number : CWS1389
Unit Name : Switch Unit

S 1	Switch(CLOSE)	CSN1051
S 2	Switch(OPEN)	CSN1052

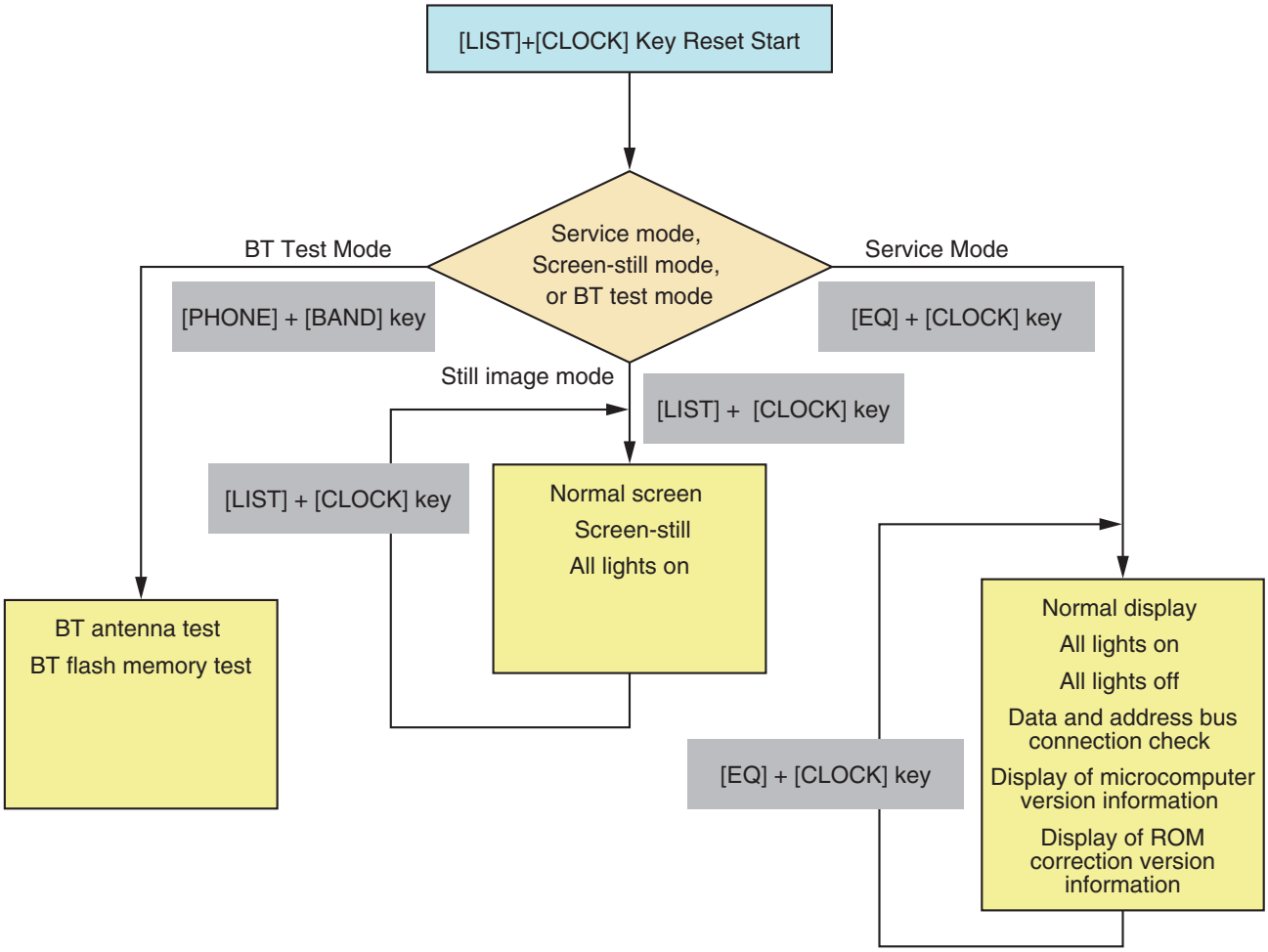
Miscellaneous Parts List

	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDLE)	CXC6742
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026
M 801	Motor Unit(FLAP)	XXA7400

6. ADJUSTMENT

6.1 DISPLAY TEST MODE

● Display Test Mode



6.2 CD ADJUSTMENT

1) Cautions on adjustments
• In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) instead of the GND.
If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:
a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

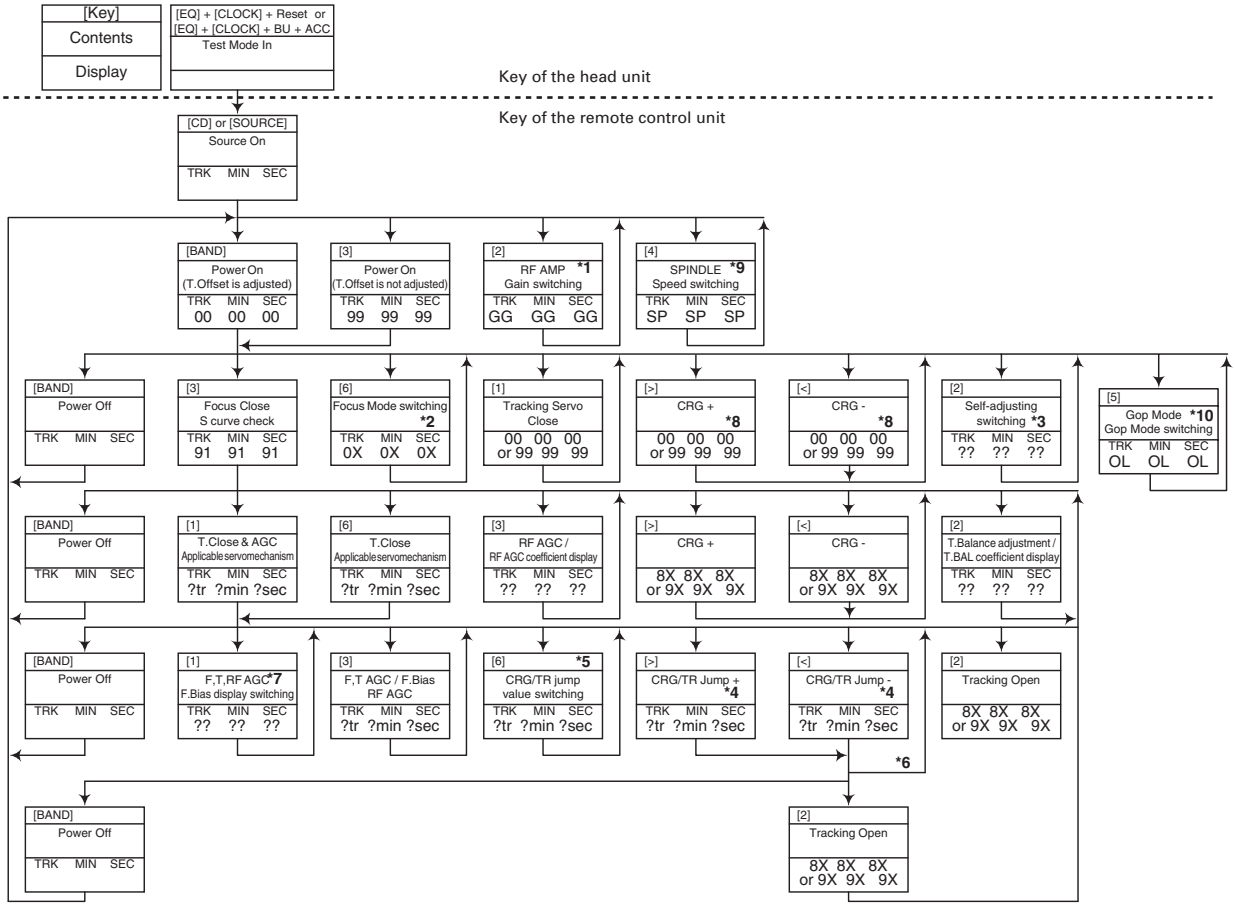
• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1 k ohms in series.

• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode
This mode is used to adjust the CD mechanism module.
• To enter the test mode.
While pressing the EQ and CLOCK keys at the same time, reset.
• To exit from the test mode.
Turn off the ACC and back up.

Notes:
a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0 dB, and the auto-adjustment values are reset to the default settings.

● Flow Chart



*1) TYP (TRK MIN SEC) → + 6 dB (TRK06 MIN06 SEC06) → + 12 dB (TRK12 MIN12 SEC12)

*2) Focus Close → S Curve check setting → F EQ measurement setting
TRK00 MIN00 SEC00 (TRK99 MIN99 SEC99) TRK01 MIN01 SEC01 TRK02 MIN02 SEC02

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

[Key]	Operation Test Mode
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction of the external surface)
[<]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC,AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close,S Curve / Rough Servo and RF AGC / F,T,RF AGC
[4]	SPDL 1X/2X switching As for the double speed(2x), audio output cannot be supported.
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG•TR Jump Switching

*Press[1] - [6] keys on the remote control unit.

*9) TYP (1X) (TRK MIN SEC) → 2X (TRK22 MIN22 SEC22) → 1X (TRK11 MIN11 SEC11)

*10) OFF(TYP) (TRK MIN SEC) → FORCUS (TRK70 MIN70 SEC70) → TRACKING (TRK71 MIN71 SEC71)

• As for the double speed (2x), audio output cannot be supported

*) • After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.
• When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).
• In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.
• When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

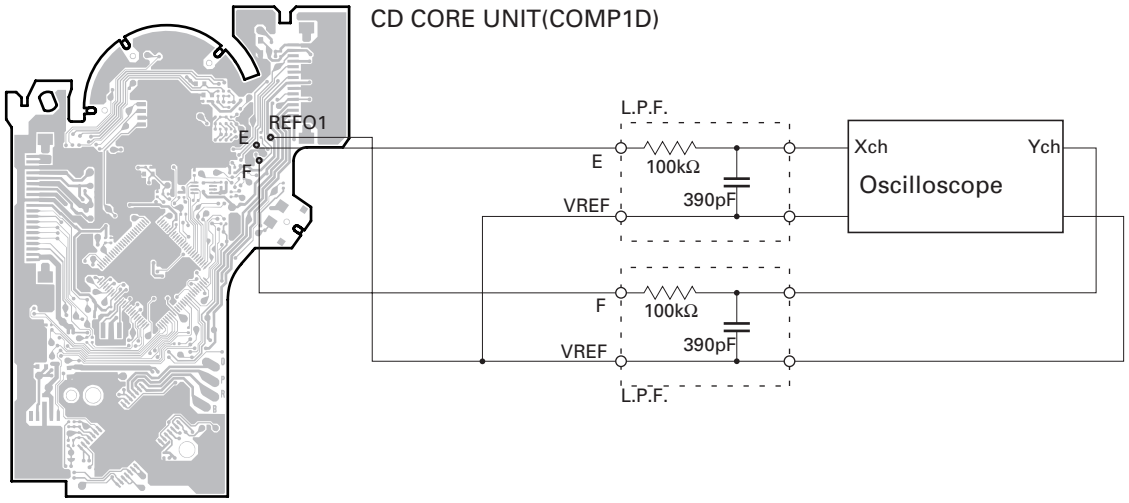
• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFO1
• Disc	• TCD-782
• Mode	• TEST MODE



• **Checking Procedure**
1. In test mode, load the disc and switch the 3 V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

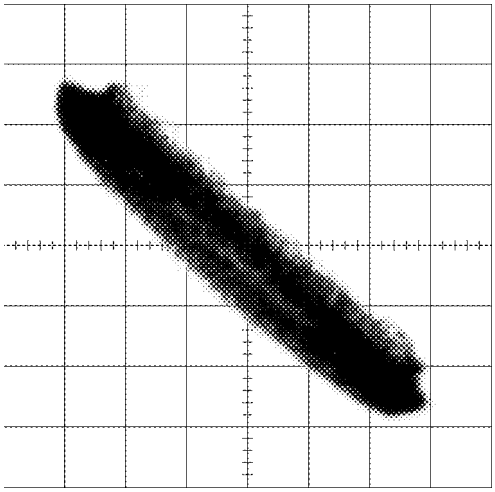
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

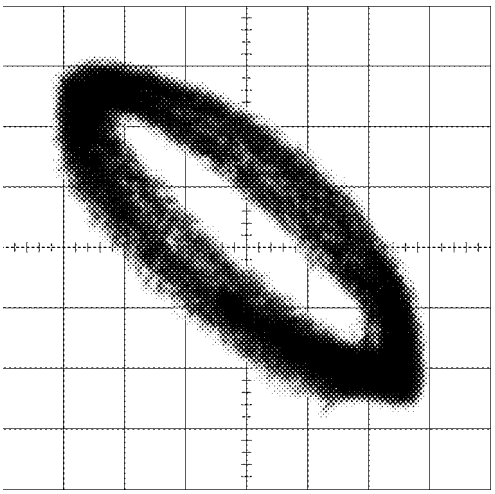
Grating waveform

Ech → Xch 20 mV/div, AC
Fch → Ych 20 mV/div, AC

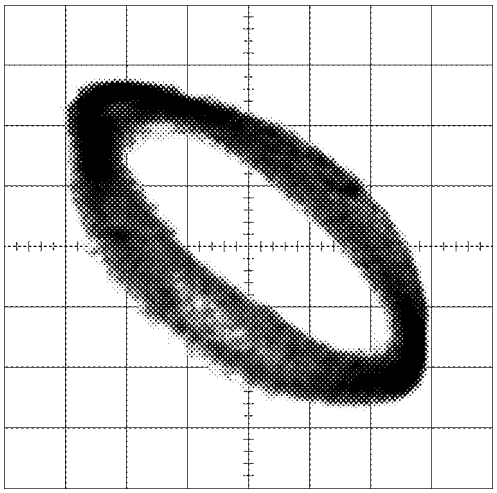
0°



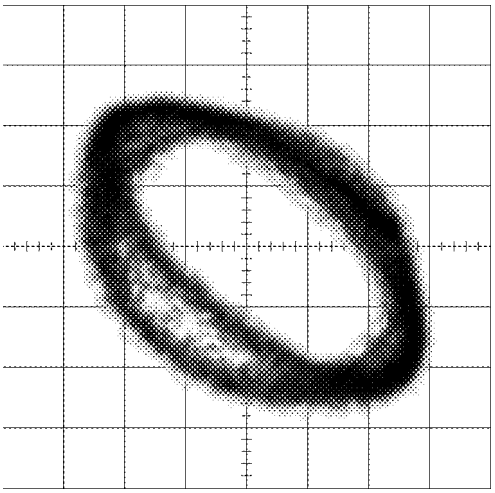
30°



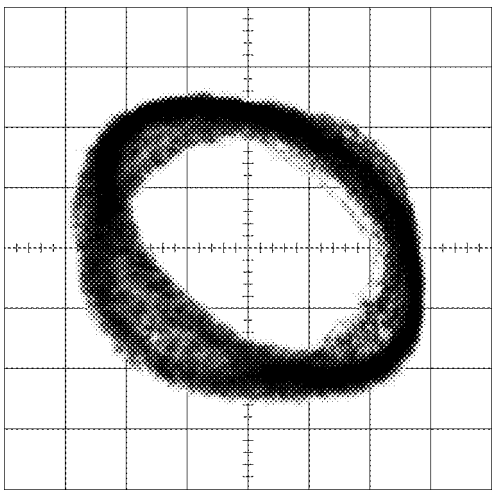
45°



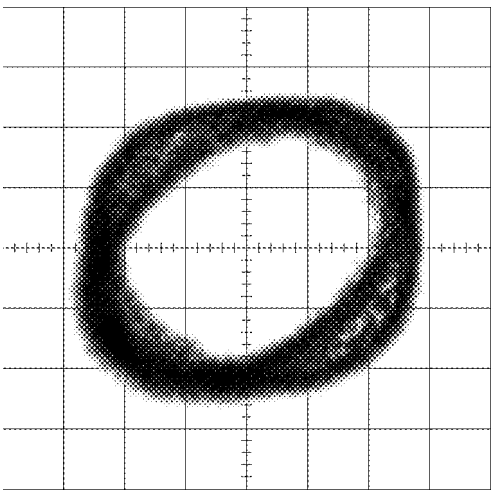
60°



75°



90°



6.4 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR–xx	ERR–xx	E–xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

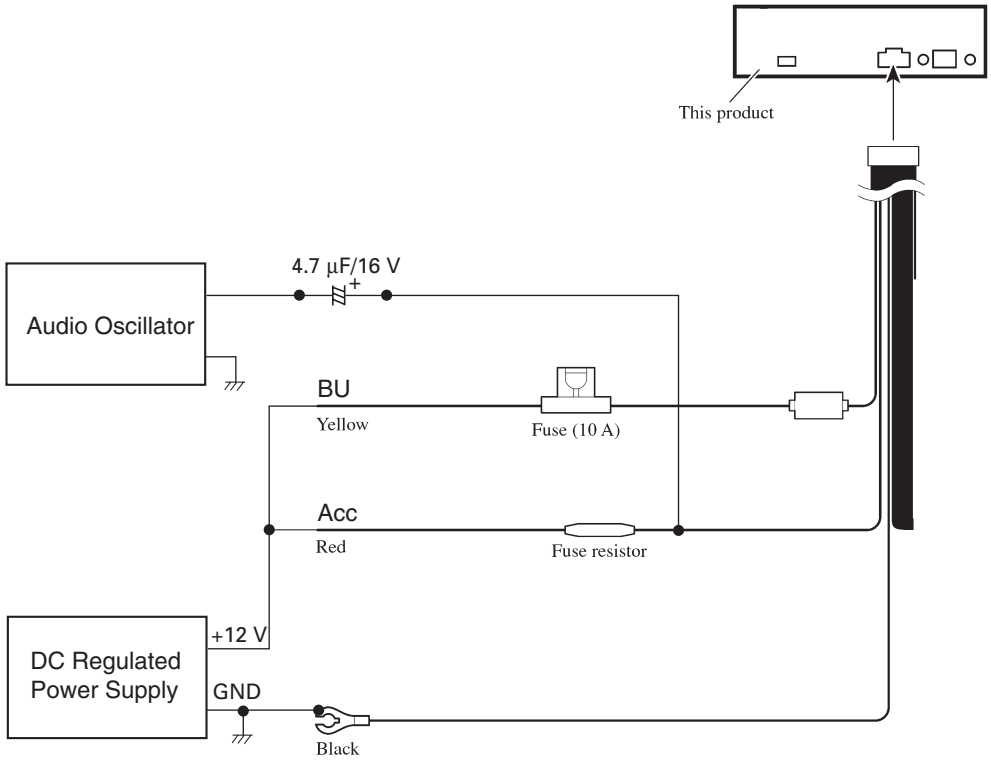
6.5 SYSTEM MICROCOMPUTER TEST PROGRAM

● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 126) terminal to H.
The clock signal is output from the PCL terminal IC601(Pin 62).
The frequency of the clock signal is 625.000 kHz that is one 32nd of the fundamental frequency.
The clock signal should be 625.000 kHz(- 25 Hz, + 25 Hz).
If the clock signal is out of the range, the X'tal (X601) should be replaced with the new one.

6.6 HOW TO CHECK THE REVOLUTION NUMBER DETECTION CIRCUIT

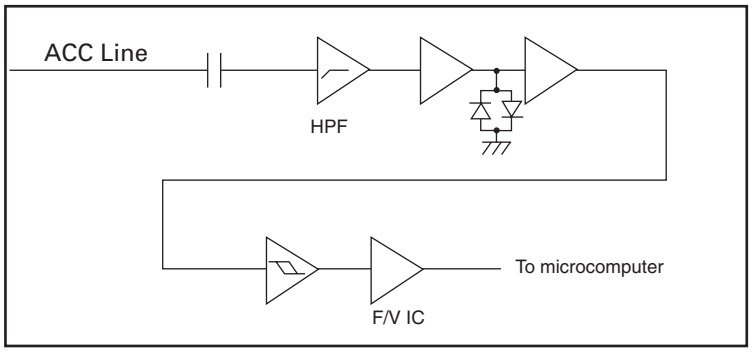
● Connection Diagram



● Checking the Revolution Number Detection Circuit

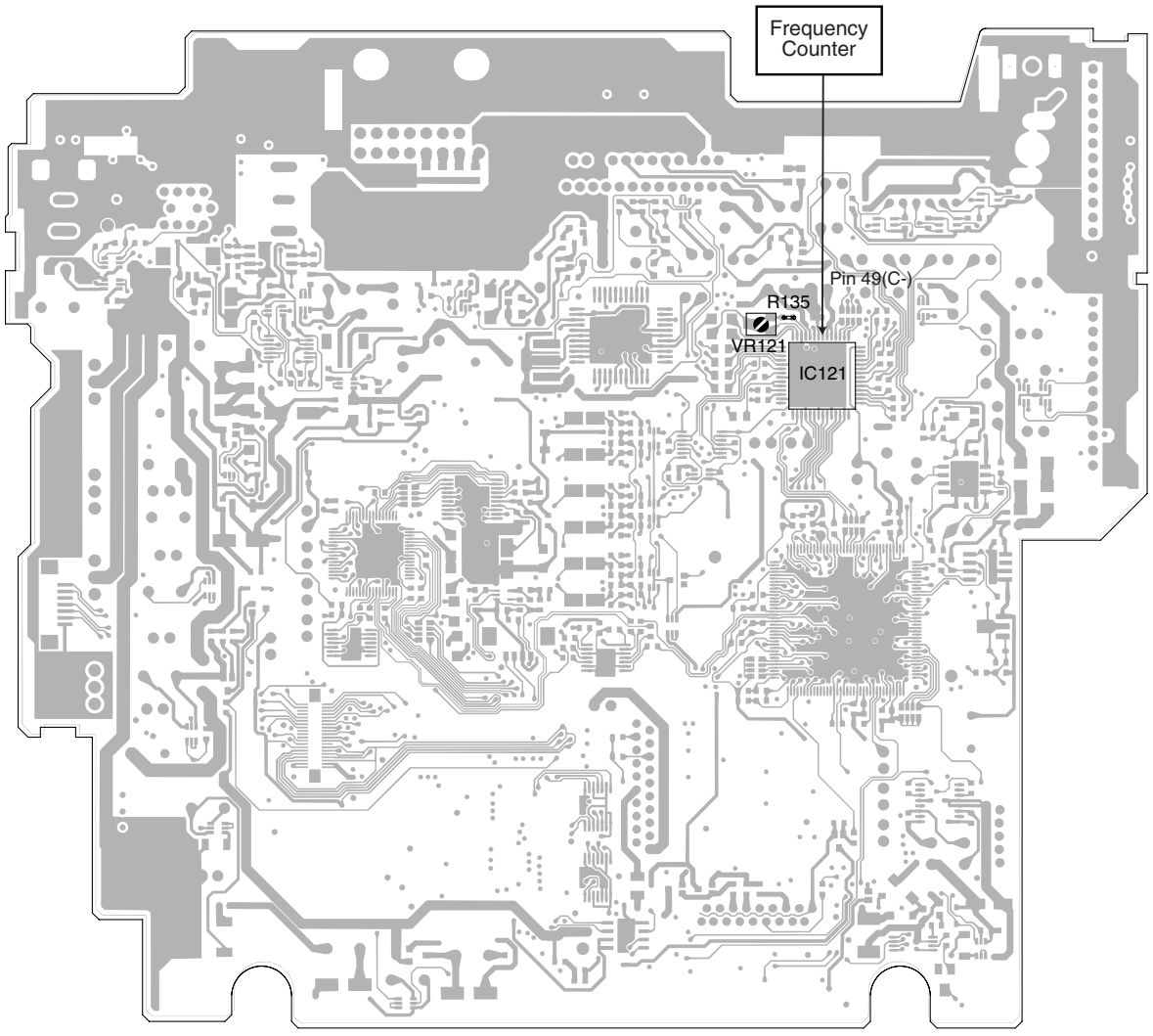
1. Input 400 mVp-p sine waves and confirm change of output voltage according to frequency.
2. There is a definite relation between alternating current frequency and the engine revolution number.
   Frequency at 4 000 rpm can be set by user operation.
   Linear complement between 0 rpm = 0 Hz and 4 000 rpm.

● Block Diagram



6.7 E.VOL IC OSCILLATING FREQUENCY ADJUSTMENT

● **Connection Diagram**



E.VOL IC oscillating frequency adjustment when you change the VR121, R135 or IC121.

● **E.VOL IC Oscillating Frequency Adjustment**

Adjustment Point	Switch Position	Adjustment Method
VR121	Source : except for AM	Frequency Counter : 400 kHz ± 10 kHz

6.8 BLUETOOTH TEST MODE

● About Memory Clear

When resetting the microprocessor, the memory is initialized except for the following four items.
This enables user to avoid the task of registering phones and transfering phone directory again even after resetting system at the time of battery exchange, etc.

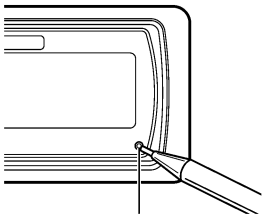
- Registration of phone
- Phone directory
- History of sending/arrival
- Dial preset

Resetting the microprocessor

The microprocessor must be reset under the following conditions:

- Prior to using this unit for the first time after installation
- If the unit fails to operate properly
- When strange or incorrect messages appear on the display

● Press RESET with a pen tip or other pointed instrument.



RESET button

Clearing all memory

To protect personal and private information, data about the phone stored in this unit can be deleted.

1 Press SOURCE and hold until the unit turns off.

2 Press MULTI-CONTROL and hold until Language select appears in the display.

3 Turn MULTI-CONTROL to select Phone reset.
Phone reset appears in the display.

4 Push MULTI-CONTROL right to show a confirmation display.
Clear memory YES is displayed. Clearing memory is now on standby.

▪ If you do not want to reset phone memory, press **BAND**.

5 Press MULTI-CONTROL to clear the memory.
All data in the telephone source, including Phone Book entries, number presets and the Call History is cleared.

● Function Specifications for Bluetooth Test Mode (when using BT-compliant mobile phone)

Specifications for BT Built-in mobile phone

The mobile phone compliant to Bluetooth Ver 1.1 requires at least *HFP and *OPP to be mounted.
The model having validly accomplished connecting verification is desirable.
The model capable of being in standby state is desirable.
*HFP : **H**ands-**F**ree **P**rofile, OPP : **O**bject **P**ush **P**rofile

1. Cautions

[Important]
* When conducting this Test Mode, writing into memory and others will be checked. Because of that, the data stored by the user will be deleted. Please obtain approval from the user beforehand.

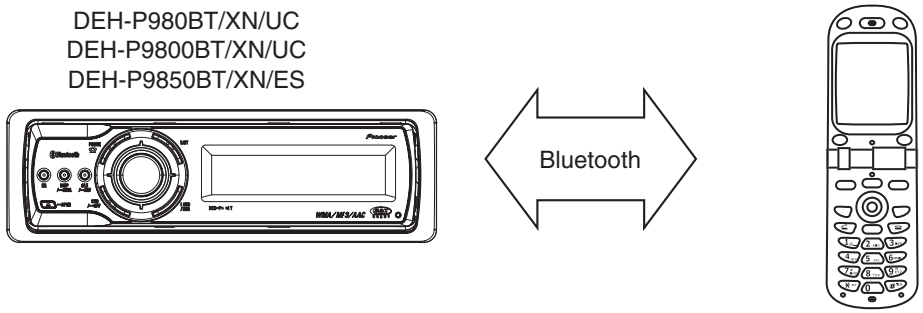
* On this product, the user's memory for telephone directory information will not be cleared even if BU power is turned off. If you register the telephone information to the unit in normal mode for checking the Bluetooth function, you have to delete the data which you registered before returning the unit to the user.

* Note that if the user is already useing all of user's memory(No.1 - 3 and Guest 1,2), you need to delete user's data in order to check the Bluetooth function in normal mode.

2. Outline of Functions

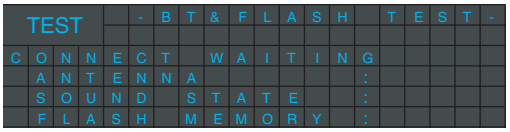
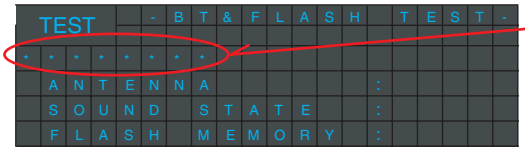
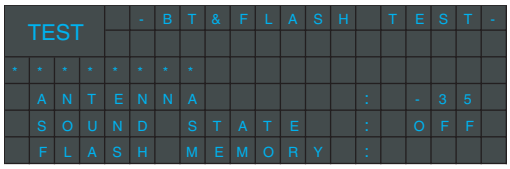
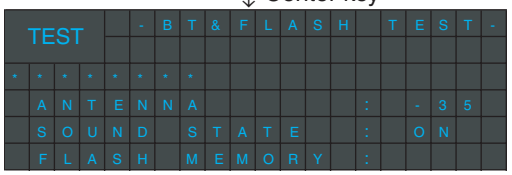
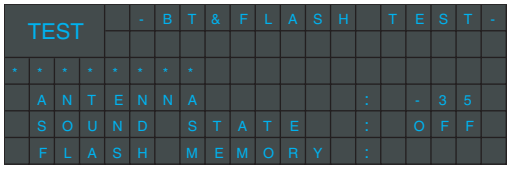
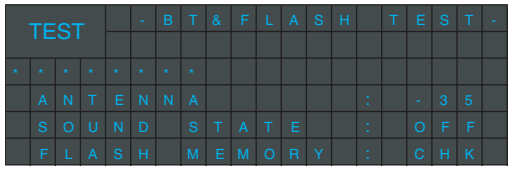
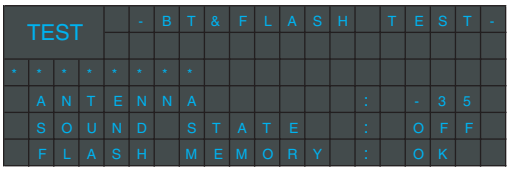
The following 3 items are to be confirmed for the simple BT action check by using BT-compliant mobile phone:
- Confirmation of Bluetooth connection (certification connection and voice connection)
- Confirmation of BT antenna sensitivity (connection)
- Confirmation of FLASH memory action

3. Configuration Diagram



4. How to Start-up the Test Mode

Specifications for Operation

Operation Method
RESET start while pressing CLOCK + LIST. ↓    DEH device name is displayed. ↓ Phone + BAND key    Standby for connection from the device (mobile phone, etc.) Connection from DEH to the device cannot be made. ↓ Device connection completed    Device name is displayed. When the connection is completed, the name of the connected device will be displayed. (MAX 12 one-byte characters) ANTENNA is checked automatically. ↓ ANTENNA check complete (automatic)    The result of ANTENNA check is displayed. The value is only a guideline. The ANTENNA level displayed is -80 to -18. If an ANTENNA value outside of the range is displayed after connection,check the condition of the unit and try from the beginning again. ↓ Center key    SKIP the following two items by pressing the Center key as they are the ones checked at the time of manufacturing. ↓ Center key    ↓ Center key    Start FLASH check. ↓ FLASH check complete    FLASH check is conducted automatically according to the following steps. Delete → Write → Read → Totally delete → Read Read out the written data, and verify that both of them match. Read out after total delete, and verify that the deletion has been accomplished. Verification is OK if OK is displayed. Test is complete if everything progressed normally up to this point.

● Function Specifications for Bluetooth Test Mode (when using 2.4 GHz-compliant spectrum analyzer)

1. Cautions

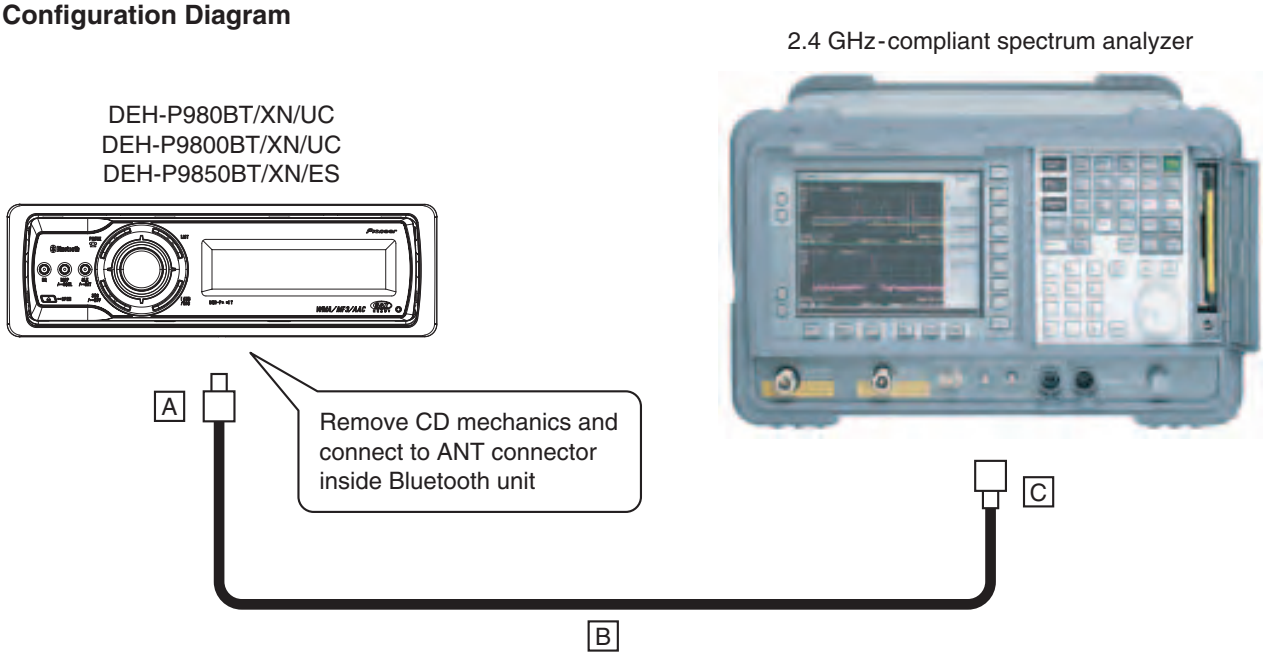
* When the service site has a 2.4 GHz-compliant spectrum analyzer, the peripheral facilities shown below are also required.
  Also, the antenna terminal on BT unit must be directly connected to the cable.
  A white coaxial cable connected to the antenna connector on BT unit is removed by taking out the upper case and CD mechanics of the product.
  This task would be safer if a special connector-drawing jig is available.
  Next, the U.FL connector from spectrum analyzer is connected. The styling of cable must be taken good care so as not to add further burden on BT antenna connector and to break it.

2. Outline of Functions

The following confirmation is to be conducted by test mode in order to simply check BT actions using 2.4 GHz-compliant spectrum analyzer.

* Confirmation of output level of Bluetooth unit

3. Configuration Diagram



A: U.FL-SMA conversion adapter
(Hirose Electric Co., Ltd CL311-0301-5)
B: Coaxial cable for SMA microwave
(Stack Electronics Co., Ltd. SMA・P-100-STF358)
C: SMA conversion connector
(Stack Electronics Co., Ltd. BA057)

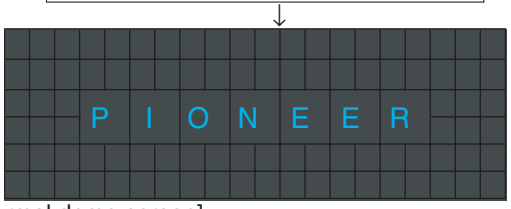
4. How to Start-up the Test Mode

Specifications for Operation

Operation Method

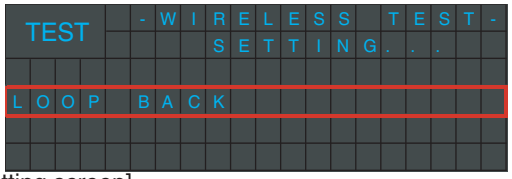
Reset while pressing EQ+CLOCK.
(Enter into "all sources test mode").

↓



[Normal demo screen]

↓ Press Phone key.



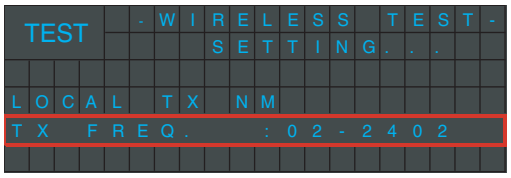
→Set to "LOCAL TX NM" by pressing the left/right key.

[Setting screen]

↓ Press the left/right key.

[Local TX NM setting]

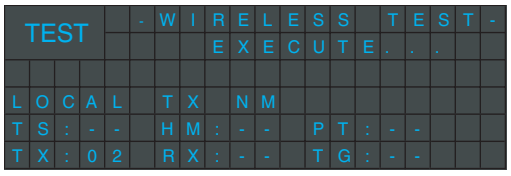
↓ Press the Center key.



→ Select the frequency by pressing the up/down key.
02-2402 (Initial value)↔41-2441↔80-2480↔95-2495
Measurement shall be taken at 02, 41 and 80.

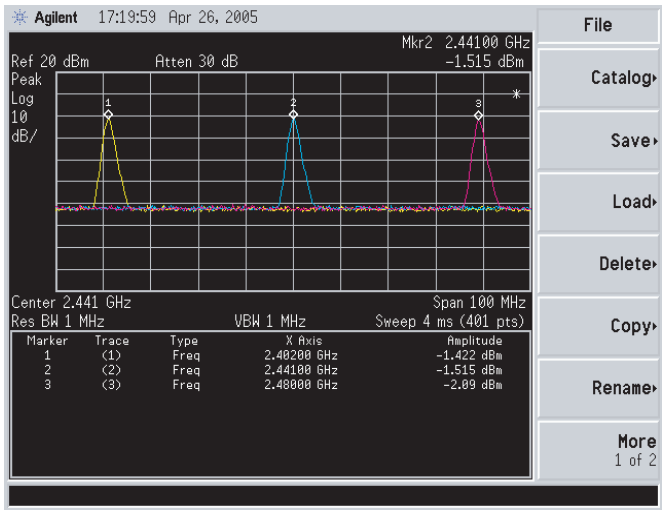
[Local TX NM detail setting]

↓ Center key



→ Return to the Local TX NM setting screen by pressing the BAND key.

[When executing Local TX NM]



As per above, measure output level of each frequency with spectrum analyzer upon connection.
A standard of judgment should be within the following range of output level V.

"-6 dBm < V < 4 dBm"

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● **Removing the Case (not shown)**

1. Remove the Case.

● **Removing the CD Mechanism Module (Fig.1)**

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

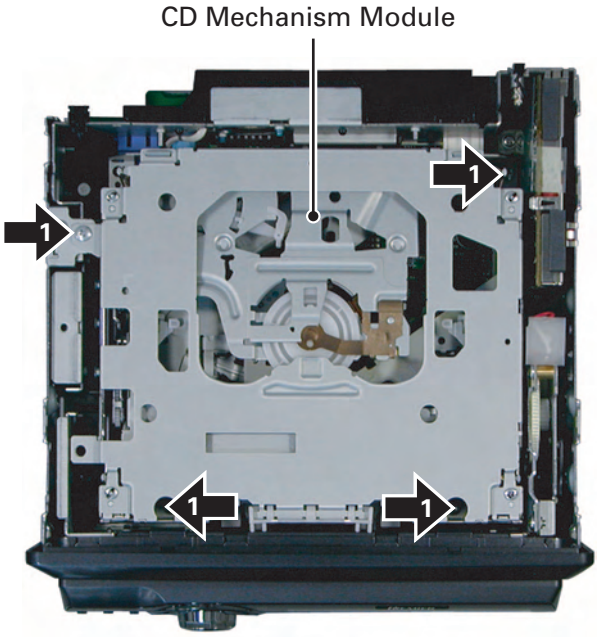


Fig.1

● **Removing the Cord Assy (Fig.2)**

1 Disconnect the Cord Assy by Jig GGF1539.

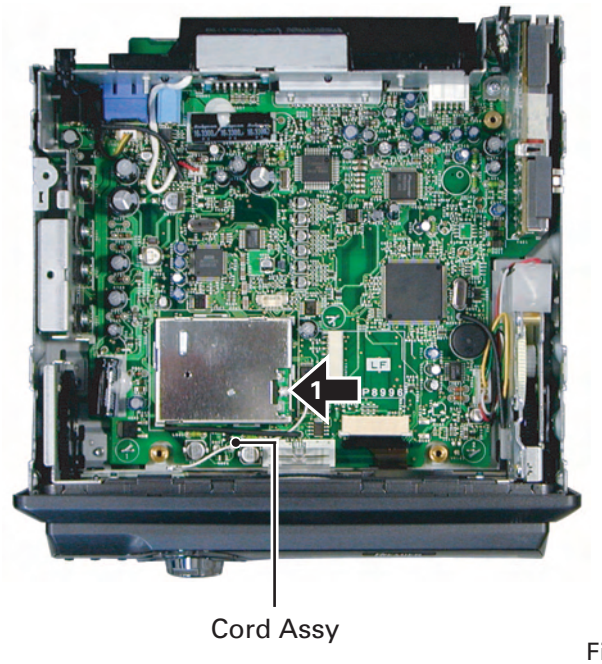


Fig.2

When unplugging the cord assy, make sure to use jig GGF1539.
If the antenna cable is directly unplugged without using jig GGF1539, you might damage your fingertip or fingernail.

● How to Remove the Cord Assy

When unplugging cord assy, hook the point of jig GGF1539 on the lid of cord assy and vertically draw out along with the engagement axis of connector.

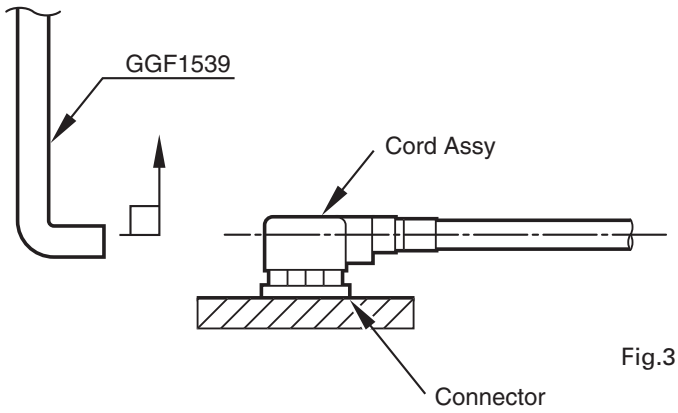


Fig.3

● How to Attach the Cord Assy

For inserting cord assy, adjust cord assy with the engagement axis of connector and insert it as vertically as possible.
Do not insert the cord assy in extreme slant, as the connector might suffer damage.

● Removing the Grille Assy (Fig.4)

1 Remove the four screws.

Disconnect the connector and then remove the Grille Assy.

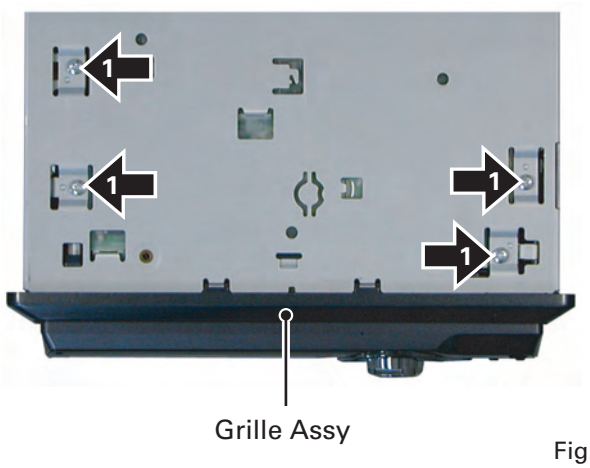


Fig.4

● Removing the Tuner Amp Unit (Fig.5)

1 Remove the three screws.

2 Straighten the tabs at three locations indicated.

3 Remove the screw and then remove the Tuner Amp Unit.

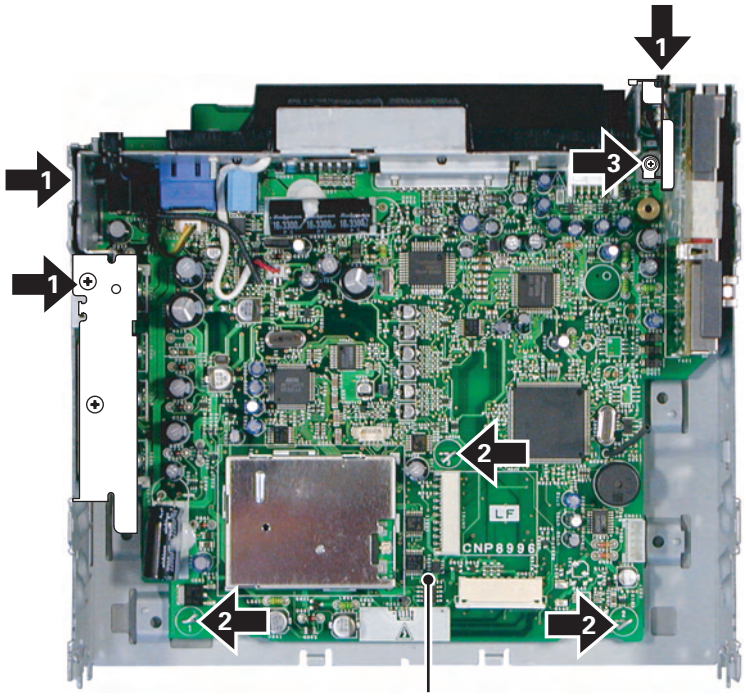
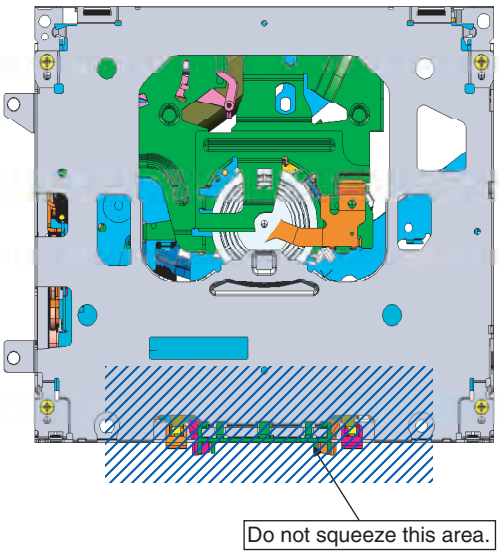


Fig.5

● How to hold the Mechanism Unit

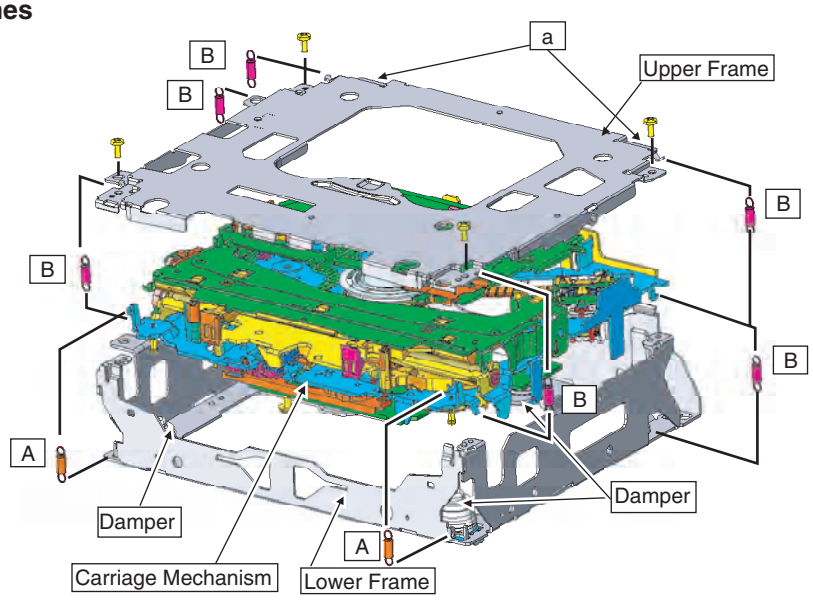
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

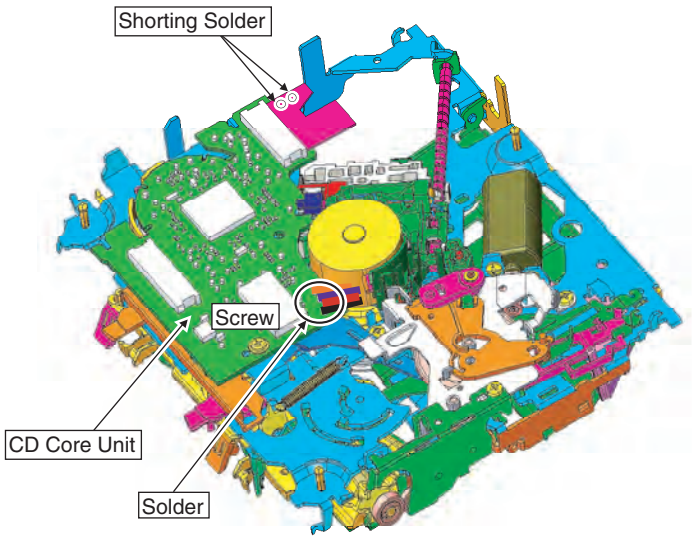
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

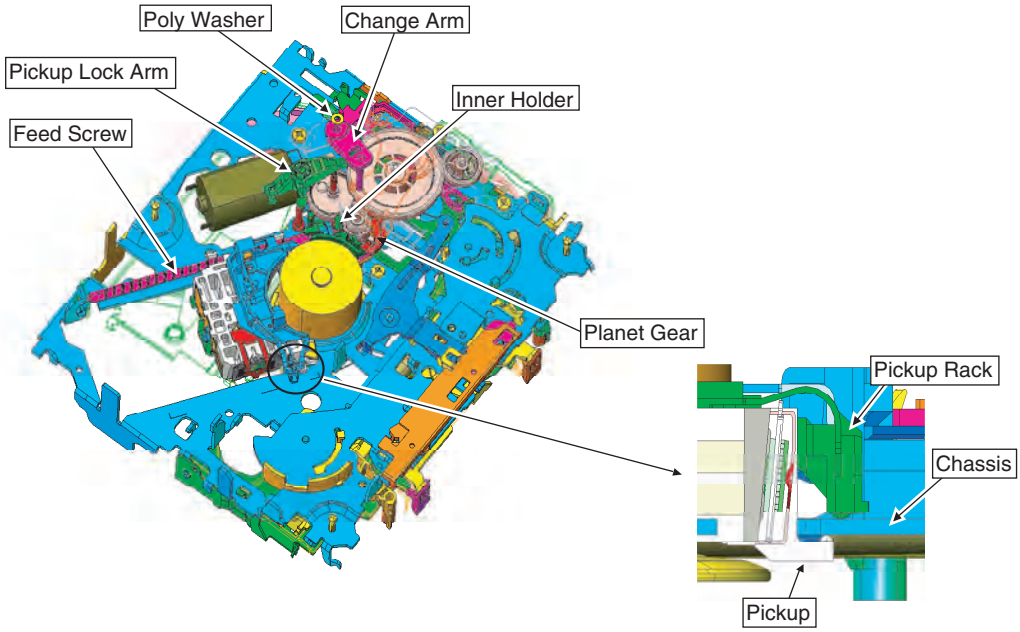
Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.



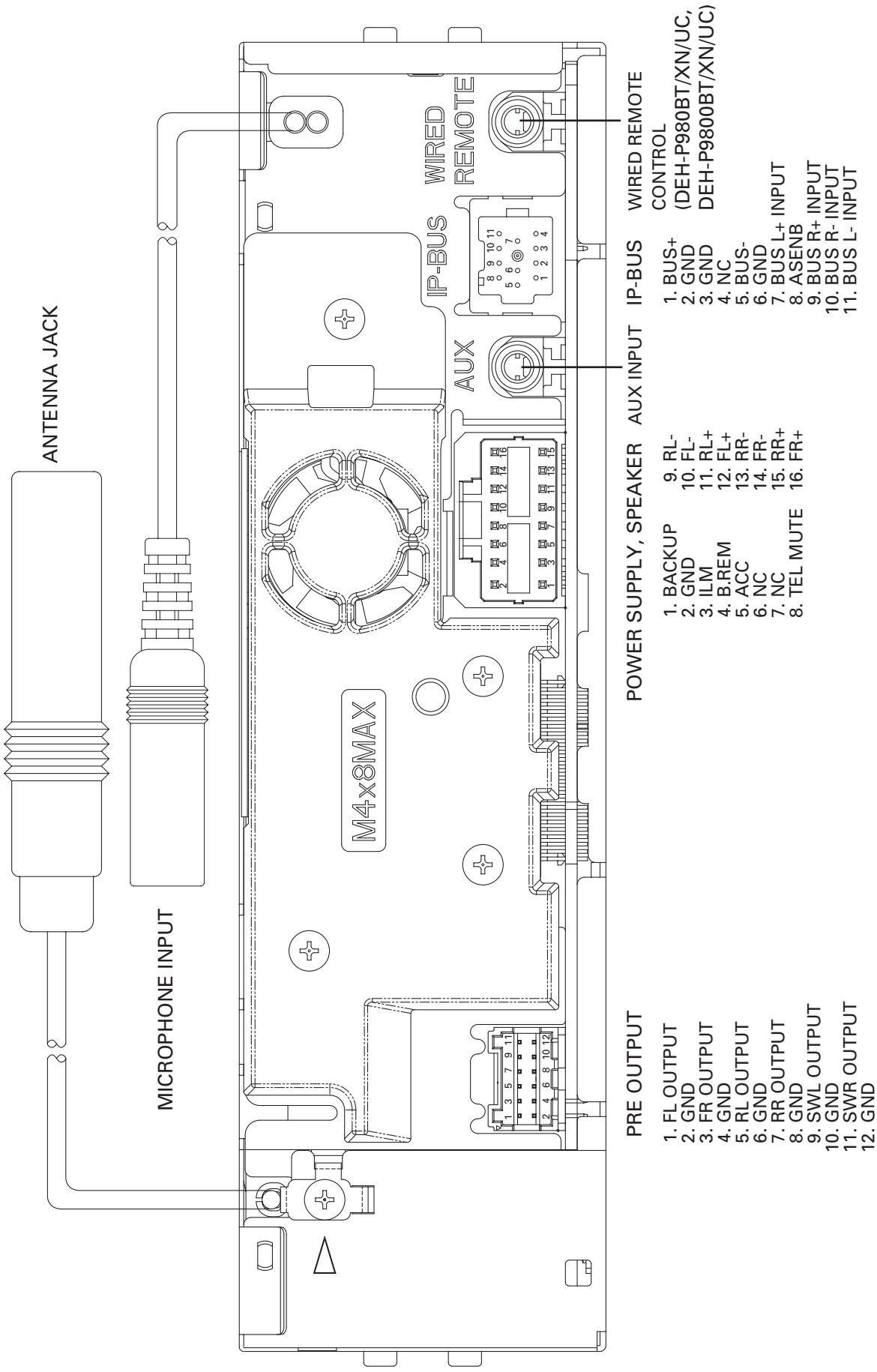
● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.
Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



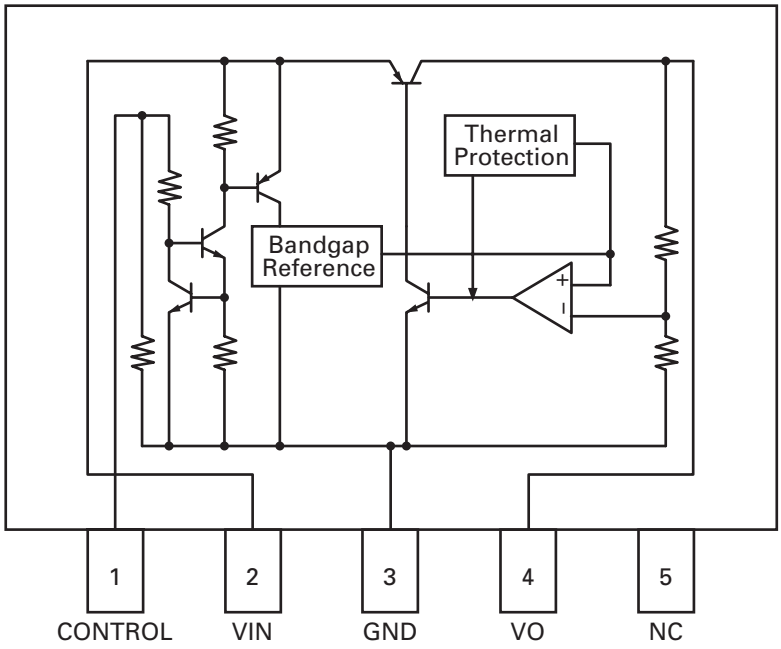
7.1.2 CONNECTOR FUNCTION DESCRIPTION



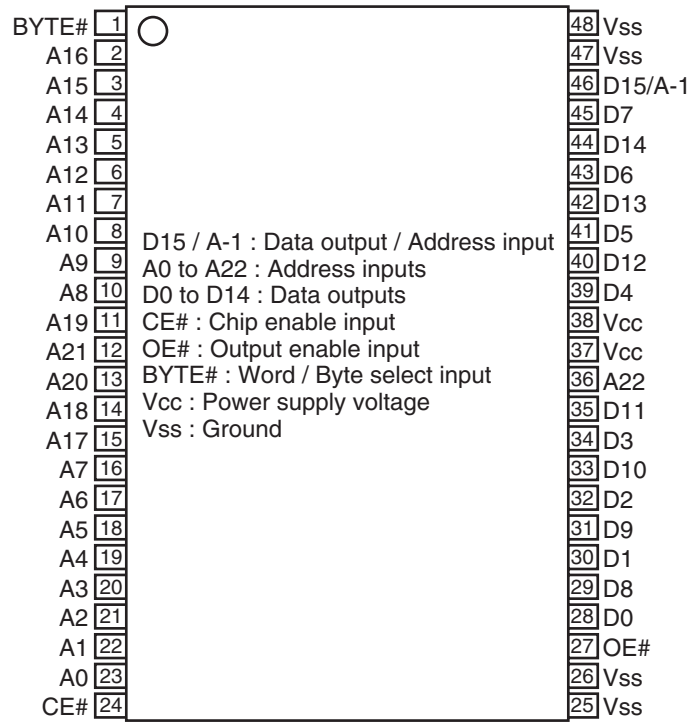
7.2 IC

NJM2886DL3-33
PD8161A
PD8162A
UPD63763CGJ
PE5552A
PEG182A
TC7WH32FU
PD6544A
GP1UX51RK
S1D13702F00A100
HA12241FP
AK7732VT
PM9009A
PCM1606EG
TC74VHCT08AFTS1
TC74VHC08FTS1
PAL007B
NJM4151M
PM8003A
PEG260A
PEG261A
S99-50084
TC4066BFT
TC74VHC02FTS1
TC7PAU04FU
AN6123MS
AK2301A

NJM2886DL3-33



PD8161A (DEH-P9800BT/XN/UC, DEH-P9850BT/XN/ES)
PD8162A (DEH-P980BT/XN/UC)

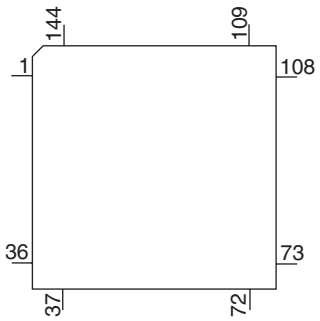


● Pin Functions (UPD63763CGJ)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Power supply for digital circuits
2	D1.GND		Ground for 1.6 V digital circuits
3	$\overline{\text{RESET}}$	I	Input of reset
4-8	AB12-8	I	Address bus 12-8 from the microcomputer
9-16	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
17	$\overline{\text{CS}}$	I	Chip selection
18	ASTB	I	Address strobe
19	$\overline{\text{READ}}$	I	Control signals(read)
20	$\overline{\text{WRITE}}$	I	Control signals(write)
21	$\overline{\text{WAIT}}$	O	Control signals(wait)
22	INTQ	O	Interruption signals to the external microcomputer
23,24	IFMODE0,1	I	Switching the microcomputer I/F 0, 1
25	D1.VDD		Power supply for 1.6 V digital circuits
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		Ground for DAC
29	REGC		Connected to the capacitor for band gap
30	DA.GND		Ground for DAC
31	LOUT	O	Output of audio for the left channel
32	DA.VDD		Power supply for DAC
33	X.VDD		Power supply for the crystal oscillator
34	XTAL	I	Connected to the crystal oscillator(16.934 4 MHz)
35	$\overline{\text{XTAL}}$	O	Connected to the crystal oscillator(16.934 4 MHz)
36	X.GND		Ground for the crystal oscillator
37	VDDREG15		Control of 1.6 V regulator
38	PWMSW0	I	Setup 0 for PWM output(SD, MD)
39-41	TEST3-1	I	Connected to Ground
42	PWMSW1	I	Setup 1 for PWM output(FD, TD)
43	TESTEN	I	Connected to Ground
44	D1.GND		Ground for 1.6 V digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	$\overline{\text{XTALEN}}$	I	Permission to oscillate 16.934 4 MHz
52	D1.VDD		Power supply for 1.6 V digital circuits
53	RFCK/HOLD	O	Output of RFCK/HOLD signal
54	WFCK/MIRR	O	Output of WFCK/MIRR signal
55	PLCK/RFOK	O	Output of PLCK/Output of RFOK
56	LOCK/RFOK	O	Output of LRCK/Output of RFOK
57	C1D1/C8M/(RA13)	O	Information on error correction/C8M : 8 MHz
58	C1D2/C16M/(RA12)	O	Information on error correction/C16M : 16 MHz
59	C2D1/RMUTE	O	Information on error correction/Mute for Rch
60	C2D2/LMUTE	O	Information on error correction/Mute for Lch
61	C2D3/SHOCK	O	Information on error correction/Detection of vibration
62	D1.GND		Ground for 1.6 V digital circuits
63	C33M	O	Output of 33.868 8 MHz(CLK for SDRAM)
64	($\overline{\text{RCS}}$)	O	DRAM $\overline{\text{CS}}$
65	RA11	O	Output of DRAM address 11
66	(CKE)	O	Output of DRAM CKE
67	$\overline{\text{RAS}}$	O	Output of DRAM $\overline{\text{RAS}}$
68	$\overline{\text{CAS0}}$(LDQM)	O	Output of DRAM lower $\overline{\text{CAS}}$(LDQM)
69	$\overline{\text{CAS1}}$(UDQM)	O	Output of DRAM upper $\overline{\text{CAS}}$(UDQM)

Pin No.	Pin Name	I/O	Function and Operation
70	$\overline{WE}$	O	Output of DRAM $\overline{WE}$
71	$\overline{OE}(\overline{CAS})$	O	Output of DRAM $\overline{OE}(\overline{CAS})$
72	D.GND		Ground for digital circuits
73-88	RDB0-15	I/O	Input/output of DRAM data0-15
89-99	RA0-10	O	Output of DRAM address0-10
100	D.VDD		Power supply for digital circuits
101	FD+	O	Output of focus drive PWM +
102	FD-	O	Output of focus drive PWM -
103	TD+	O	Output of tracking drive PWM +
104	TD-	O	Output of tracking drive PWM -
105	SD+	O	Output of thread drive PWM +
106	SD-	O	Output of thread drive PWM -
107	MD+	O	Output of spindle drive PWM +
108	MD-	O	Output of spindle drive PWM -
109	REFOUTSV	O	REFOUT for servo
110	AD.VDD		Power supply for ADC
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	ATEST	O	Analog tests
114	RFI	I	Input of RF
115	AD.GND		Ground for the analog system
116	AGCO	O	Output of RF
117	C3T	O	Connection to the capacitor for detecting 3T
118	AGCI	I	Input of AGC
119	RFO	O	Output of RF(AGC)
120,121	EQ2,1	I	Equalizer 2, 1
122	RF2-	I	Reversal input of RF2
123	RF-	I	Reversal input of RF
124	A.GND		Ground for the analog system
125	A	I	Input of A
126	C	I	Input of C
127	B	I	Input of B
128	D	I	Input of D
129	F	I	Input of F
130	E	I	Input of E
131	VREFIN	I	Input of reference voltage
132	A.VDD		Power supply for the analog system
133	REFOUT	O	Output of reference voltage
134	REFC	I	Connected to the capacitor for output of REFOUT
135	FE-	I	Reversal input of FE
136	FEO	O	Output of FE
137	ADIN	I	Input of FE, TE A/D converter
138	TE-	I	Reversal input of TE
139	TEO	O	Output of TE
140	TE2	O	TE2
141	TEC	I	TEC
142	LD	O	Output of LD
143	PD	I	Input of PD
144	D.GND		Ground for digital circuits

UPD63763CGJ

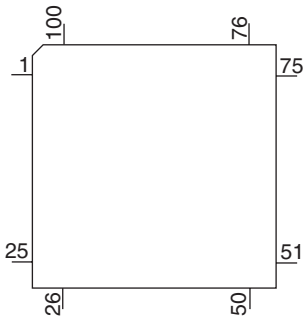


● Pin Functions (PE5552A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	AVREF			A power supply / Positive power supply(5 V)
2	AVSS			A power supply GND
3	$\overline{\text{TESTIN}}$	I		Chip check test program starting input
4	CLAMP			Not used
5	EVDD			E power supply / Positive power supply
6	FMODE			For flash rewriting / L : flash rewriting mode
7	FLRQ			For flash rewriting / Reset voltage control
8	IC/FLMD0			IC : VSS direct connection/FLMOD0 : Pull-down
9	VDD			Positive power supply(5 V)
10	REGC			Connected to the capacity stabilizing output of the regulator
11	VSS			GND
12	X1	I		Oscillator connection for mainclock
13	X2			Oscillator connection for mainclock
14	$\overline{\text{RESET}}$	I		System reset input
15	XT1	I		Connected to the oscillator for subclock(connected to VSS via the resistor)
16	XT2			Connected to the oscillator for subclock(Open)
17	PULLDOWN	I		Connected to EVDD or EVSS via the resistor
18	$\overline{\text{EJSW}}$			Not used
19	$\overline{\text{XINT}}$	I	C	CD LSI interruption signal input
20	NC			Not used
21	$\overline{\text{BRST}}$	I		Bus reset input
22	BSI	I		Bus serial data input
23	BSO	O	C	Bus serial data output
24	$\overline{\text{BSCK}}$	I/O	/C	Bus serial clock input/output
25	FTxD	O	C	For flash rewriting(transmitted signal)
26	FRxD	I		For flash rewriting(received signal)
27	BRXEN	I/O	/C	Bus RX enable input/output
28	$\overline{\text{BSRQ}}$	I/O	/C	Bus serial clock input/output
29	$\overline{\text{DSPOK}}$			Not used
30	DSCSNS	I	C	Disc state sense input
31	8EJ(S905)	I	C	input of detection of 8 cm disc ejection
32	12EJ(S904)	I	C	input of detection of 12 cm disc ejection
33	EVSS			E power supply GND
34	EVDD			E power supply / Positive power supply
35,36	SRAMLEVEL0,1	O		SRAM level meter output
37	EMPH	O	C	Emphasis information output
38	$\overline{\text{EMPH}}$			Not used
39	CDMUTE			Not used
40	LOEJ			Not used
41	CLCONT	O		Driver input switching output
42	HOME	I		Home SW sense input
43	$\overline{\text{ADENA}}$	O	C	A/D reference voltage supply control output
44	LRCKOK	O	C	(DOUT mute output)
45	SRAMLEVEL2	O	C	SRAM level meter output
46	CD3VON(MCKRQ)	O	C	CD + 3.3 V power supply control output(Digital output : MCKRQ)
47	CONT	O	C	Servo driver power supply control output
48	$\overline{\text{XRST}}$	O	C	CD LSI reset control output
49	VDCONT	O	C	VD power supply control output
50	$\overline{\text{XSI}}$	I		CD LSI serial data input
51	$\overline{\text{XSO}}$	O	C	CD LSI serial data output
52	$\overline{\text{XCK}}$	O	C	CD LSI serial clock output
53	$\overline{\text{XWAIT}}$	I	C	CD LSI wait control signal input
54	XASTB	O	C	CD LSI address strobe output
55	AD0	O	C	Address/data Bus 0
56	INT			Not used

Pin No.	Pin Name	I/O	Format	Function and Operation
57	ROMDATA	I/O		E2PROM data input/output
58	ROMCK	O		E2PROM clock output
59	ROMCS	O	C	E2PROM chip selection output
60,61	NC			Not used
62	CLKOUT			Not used
63	LOCK	I		Spindle lock input
64-68	NC			Not used
69	BVSS			B power supply GND
70	BVDD			B power supply / Positive power supply
71-75	NC			Not used
76	FLMD1	I/O	/C	Address/Data Bus 5
77-90	NC			Not used
91-93	A/D			Not used
94	$\overline{\text{CSENS}}$			Not used
95	TYPE_A/D			Not used
96,97	NC			Not used
98	TEMP			Not used
99	VDSENS	I		VD power supply short sense input
100	DSCSNS			Not used

PE5552A

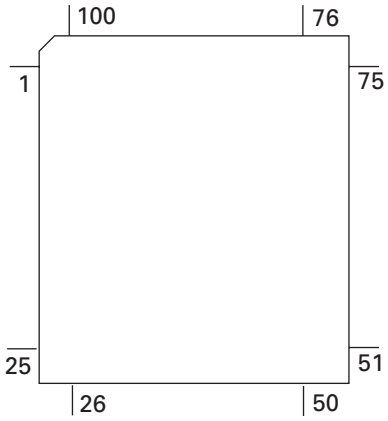


Format	meaning
C	C MOS

● Pin Functions (PEG182A)

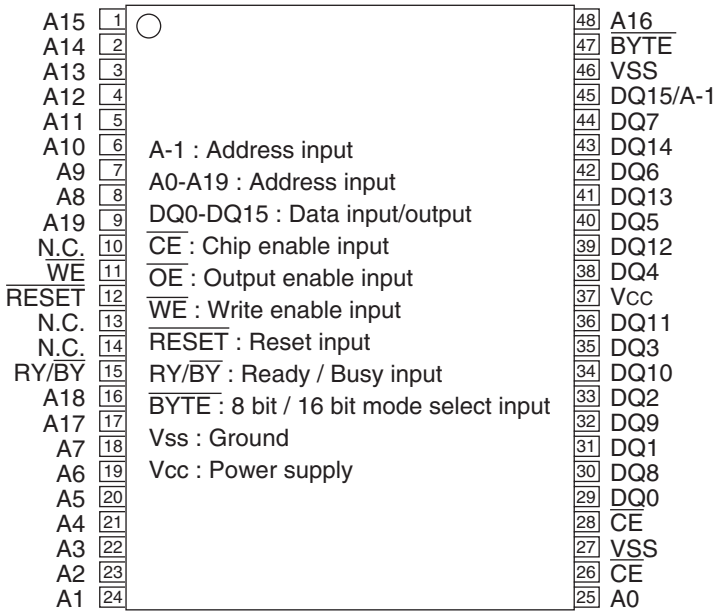
Pin No.	Pin Name	I/O	Format	Function and Operation
1	DRIVE_CS	O	C	Anode driver IC chip select output
2	ROMDT	I/O	/C	ROM correction : Data input/output
3	ROMCS	O	C	ROM correction : Chip select output
4	ROMCK	O	C	ROM correction : Clock output
5	REM	I		Remote control reception input
6	BYTE	I		GND connection
7	CNVSS	I		GND connection
8	NC			Not used OPEN
9	BTLED	O	C	Bluetooth attestation LED output
10	$\overline{\text{RESET}}$	I		Reset input
11	XOUT	O		Crystal oscillating element connection pin
12	VSS1			GND connection
13	XIN	I		Crystal oscillating element connection pin
14	VCC1			VDD connection
15	$\overline{\text{NMI}}$	I		Pull up
16	OELINT	I		OEL controller : VSYNC interrupt notification input
17	OELRESET	O	C	OEL controller : Reset output
18	FLRESET	O	C	Flash memory : Reset output
19	FLBUSY	I		Flash memory : READY and BUSY signal detect input
20	FLCE-ON	O	C	Flash memory : Chip enable output
21	P2CE-ON	O	C	P2ROM : Chip enable output
22	ROMBK2	O	C	Image ROM : Bank address output
23	ROMBK1	O	C	Image ROM : Bank address output
24	ROMBK0	O	C	Image ROM : Bank address output
25	NC			Not used
26-28	$\overline{\text{KS2}}$-$\overline{\text{KS0}}$	O		Key strobe output
29	KYDT	O	N	Key data output
30	DPDT	I		Display data input
31,32	NC			Not used
33	CDTX	O	C	CD mechanism : Data output
34	CDRX	I		CD mechanism : Data input
35,36	NC	O		Not used
37	$\overline{\text{RDY}}$	I		RDY signal input
38	NC			Not used OPEN
39	$\overline{\text{HOLD}}$	I		Pull up
40	NC			OPEN
41	BCLK			OEL controller : clock output
42	$\overline{\text{RD}}$	O	C	Image ROM : Read stobe output
43	NC			OPEN
44	$\overline{\text{WR}}$	O	C	Write strobe output
45-47	$\overline{\text{CS0}}$-$\overline{\text{CS2}}$	O	C	External ROM chip select output
48-59	A20-A9	O	C	Address bus 20-19 output
60	VCC2			VDD connection
61	A8	O	C	Address bus 8 output
62	VSS2			GND connection
63-70	A7-A0	O	C	Address bus 7-0 output
71-86	D15-D0	I/O	C	Data bus 15-0 input / output
87,88	NC			Not used
89	JOYST	I		Rotary commander data input
90	NC			Not used
91-93	$\overline{\text{KD2}}$-$\overline{\text{KD0}}$	I		Key data input
94	AVSS			GND connection
95	NC			Not used
96	VREF			GND connection
97	AVCC			VCC connection
98,99	NC			Not used
100	OELROMCS	O	C	E2 ROM : Chip select output

PEG182A

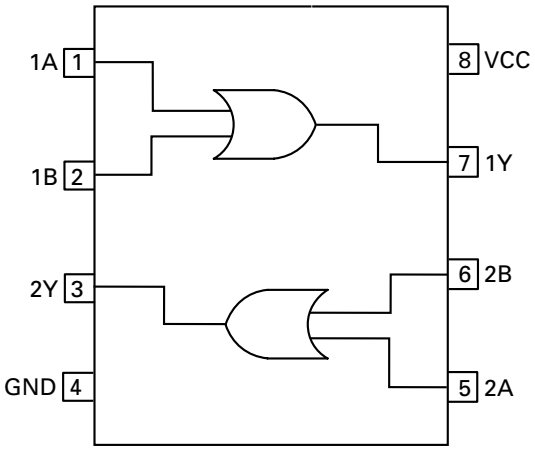


Format	Meaning
C	CMOS
N	Nch open drain

PD6544A

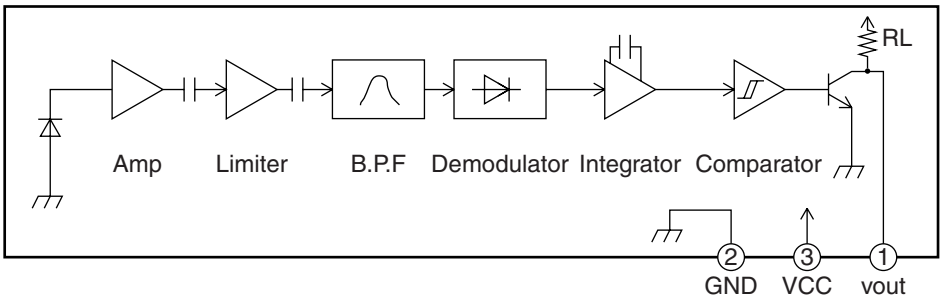


TC7WH32FU

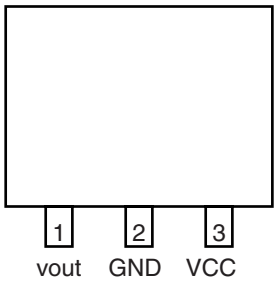


GP1UX51RK

● **Block Diagram**

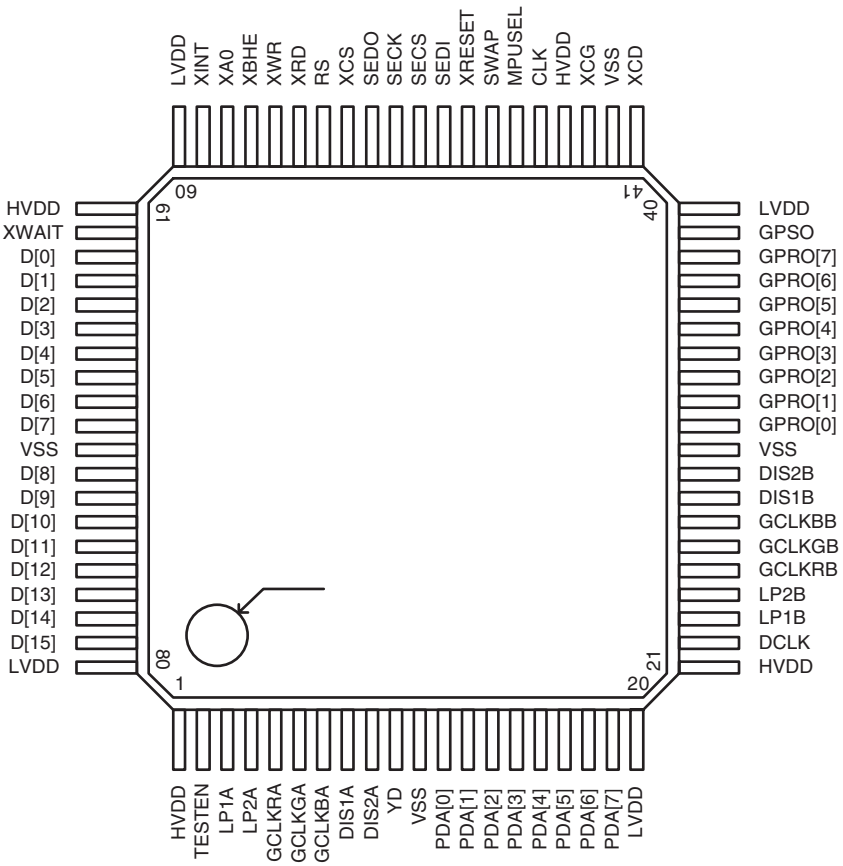


● **Pin Layout**

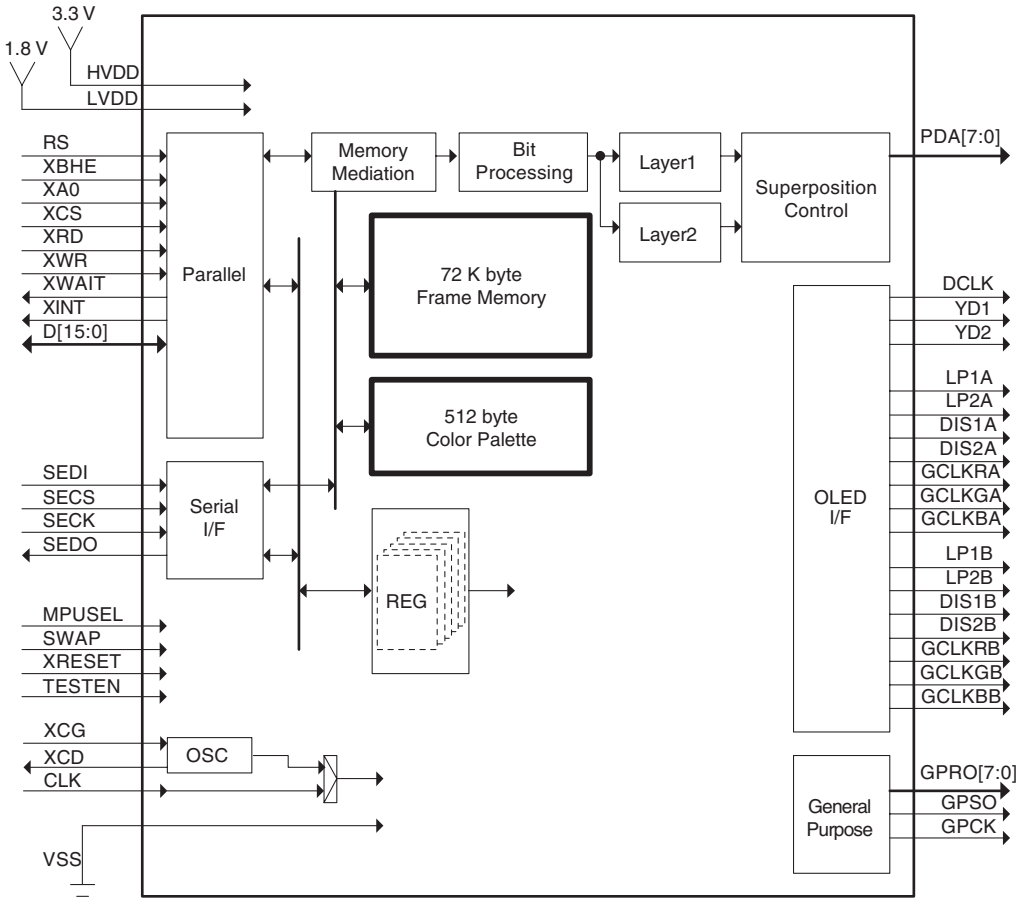


S1D13702F00A100

● Pin Layout



● Block Diagram



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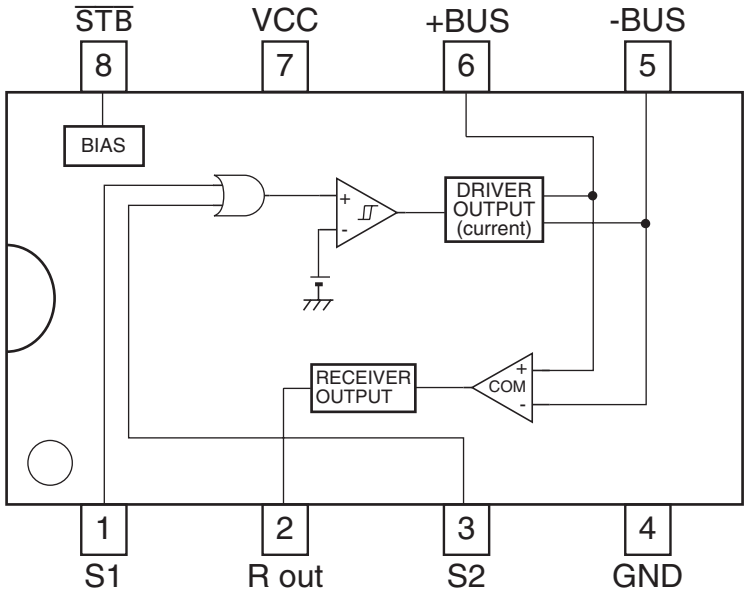
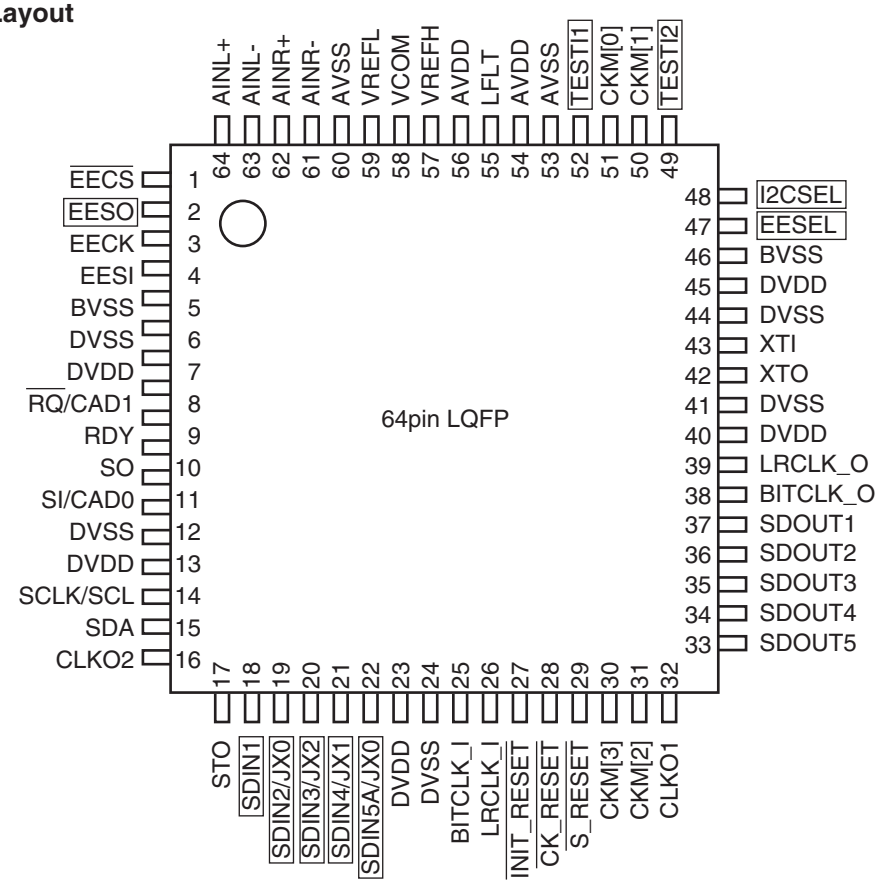


AK7732VT

● **Pin Layout**



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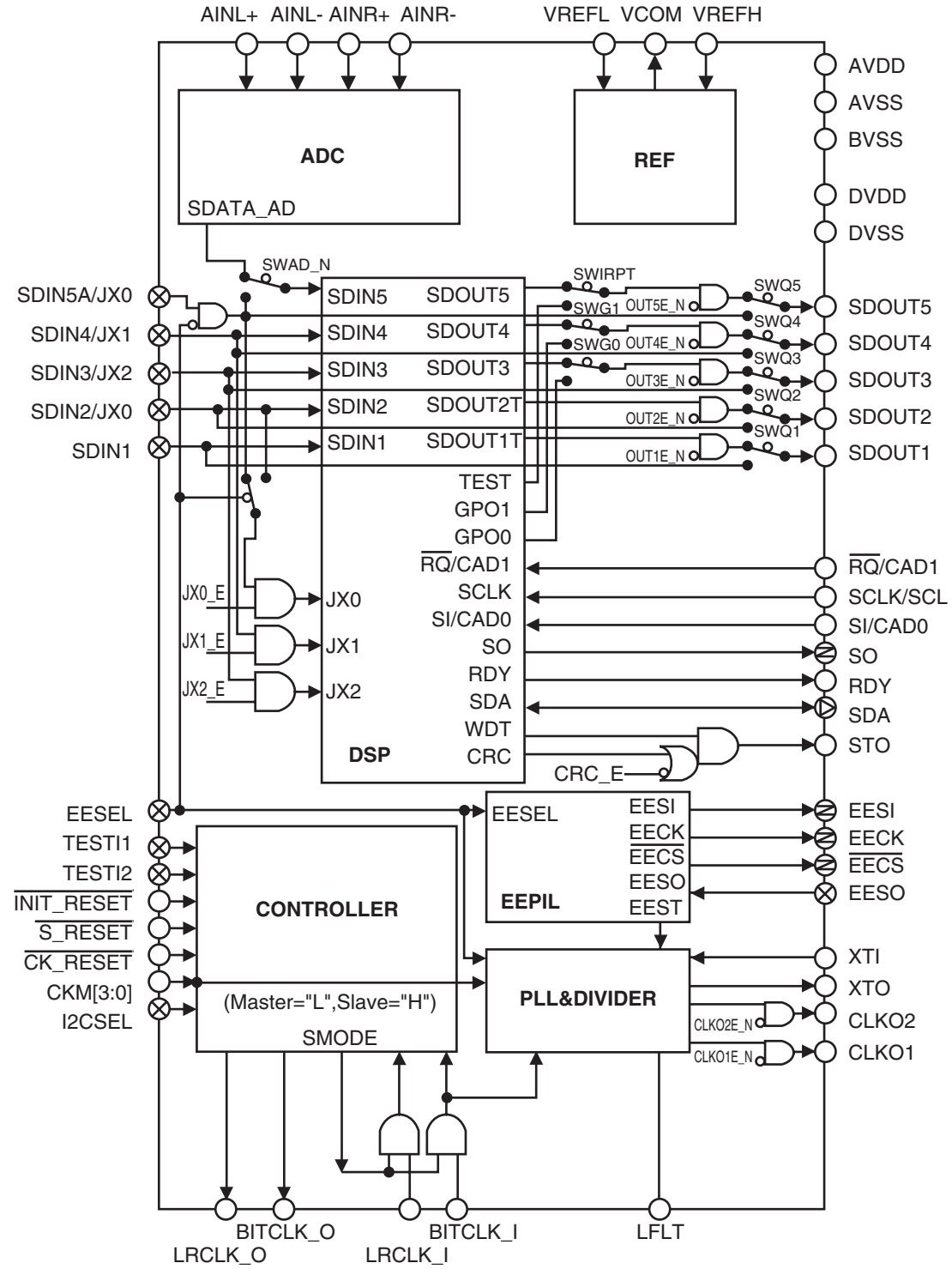
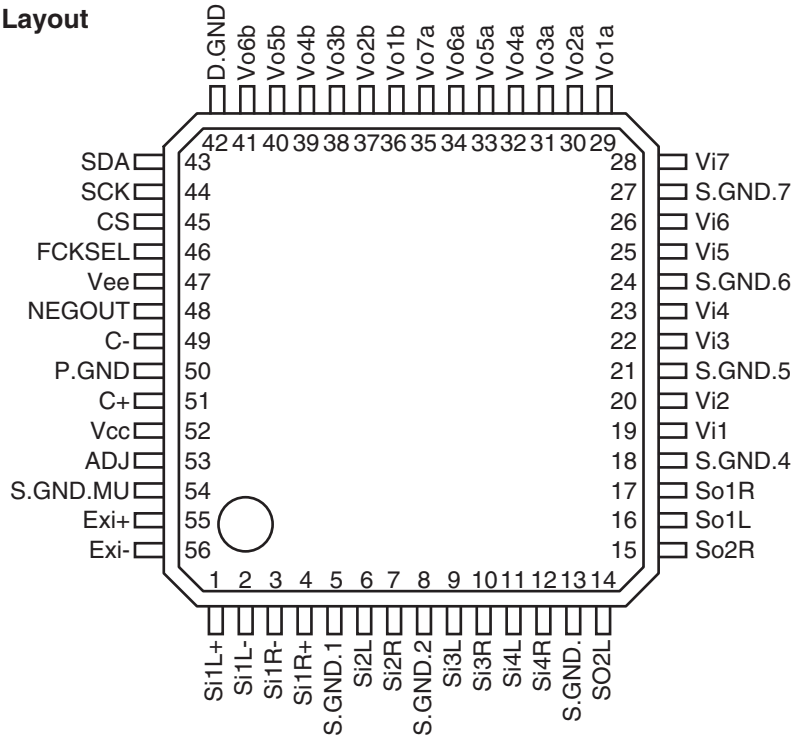


PM9009A

● Pin Layout



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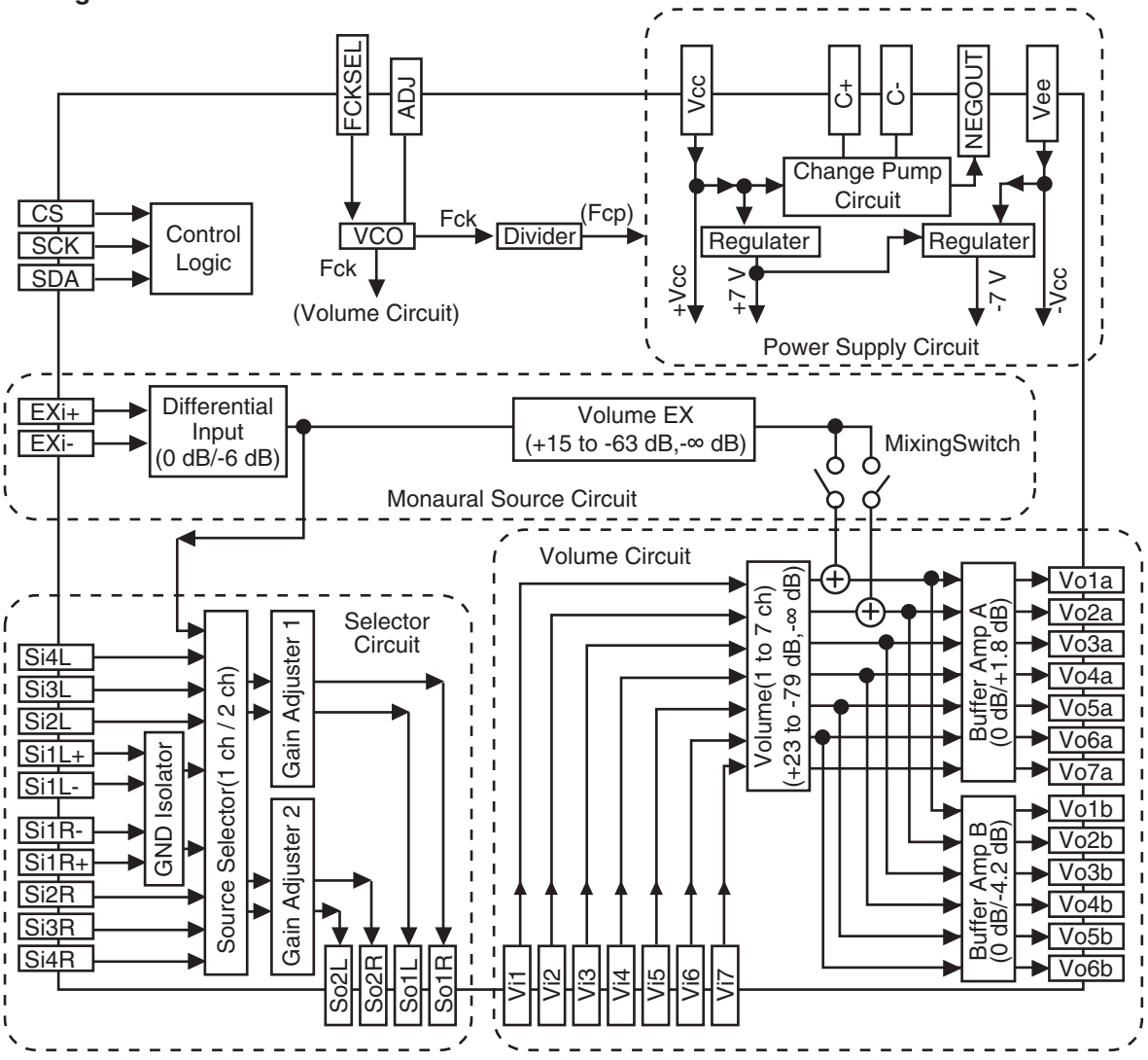
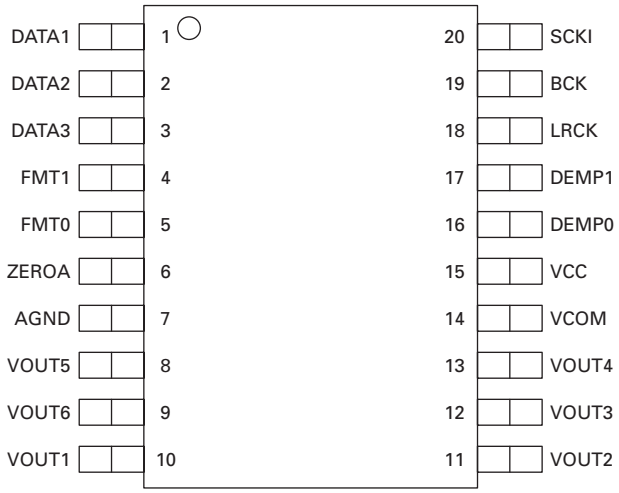


PCM1606EG

● Pin Layout



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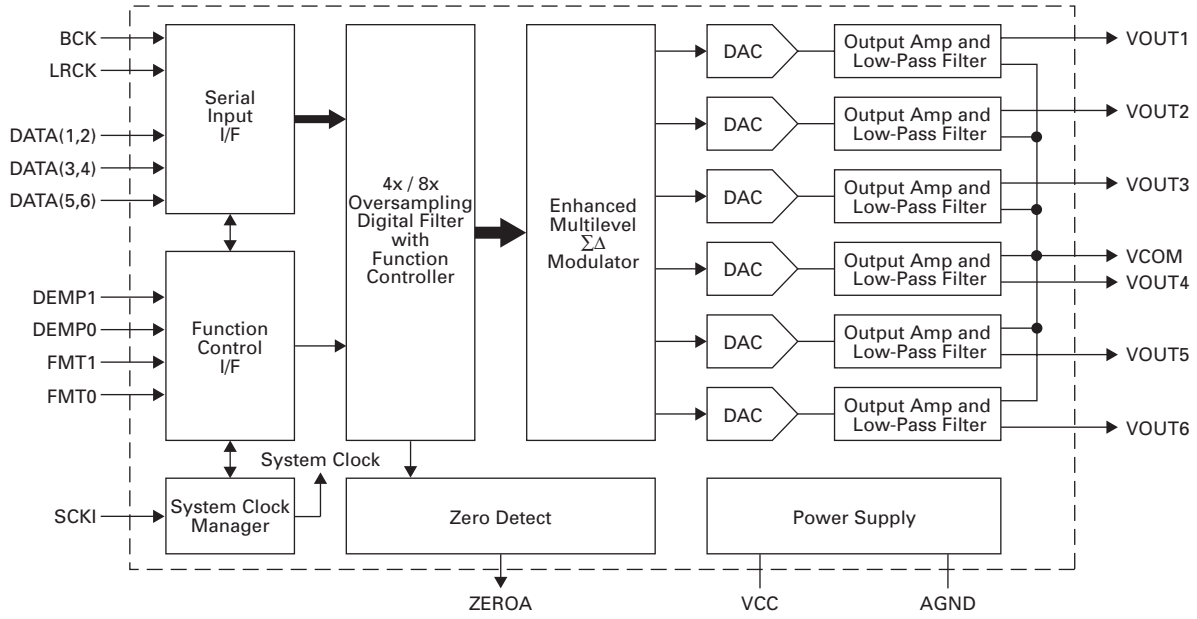
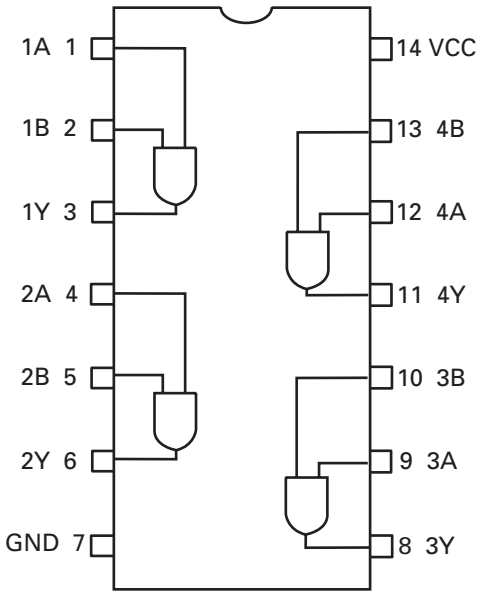
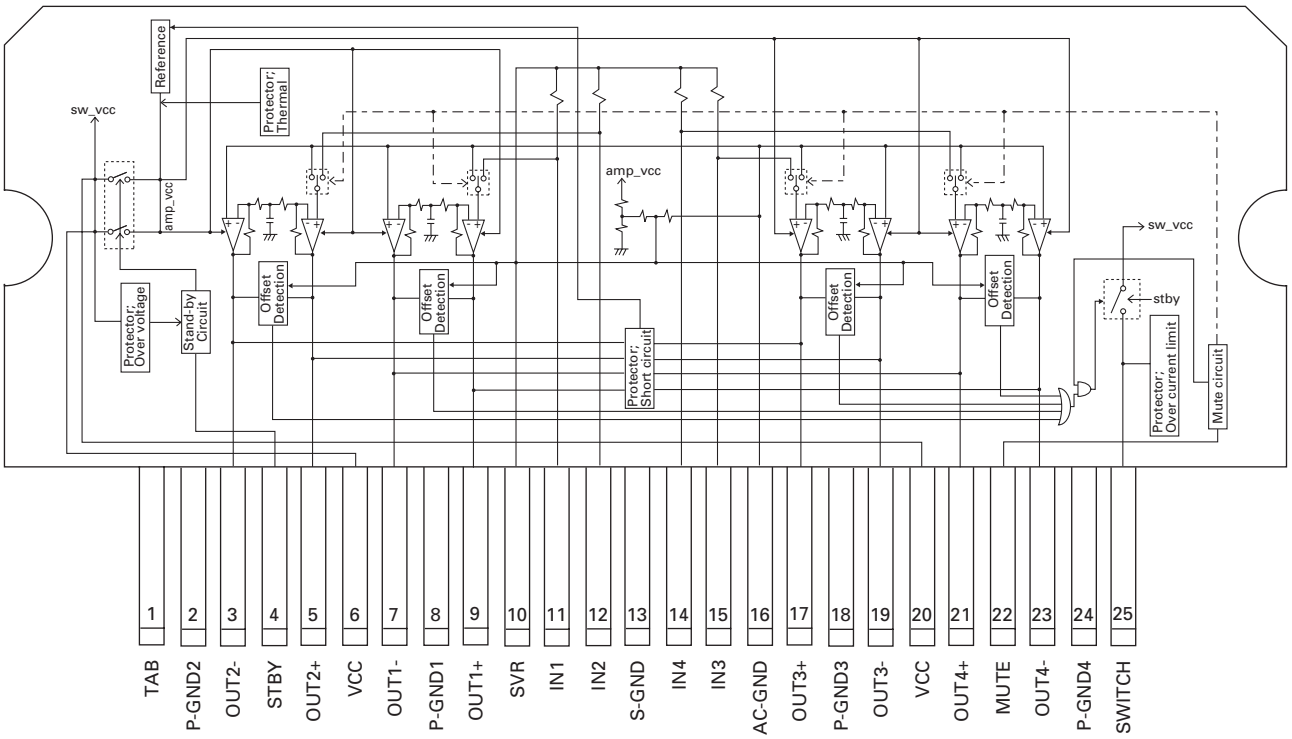


TC74VHCT08AFTS1,
TC74VHC08FTS1

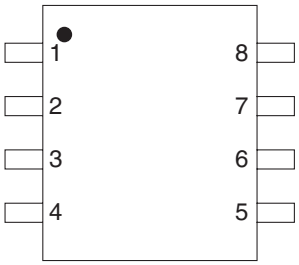


PAL007B



NJM4151M

● Pin Layout



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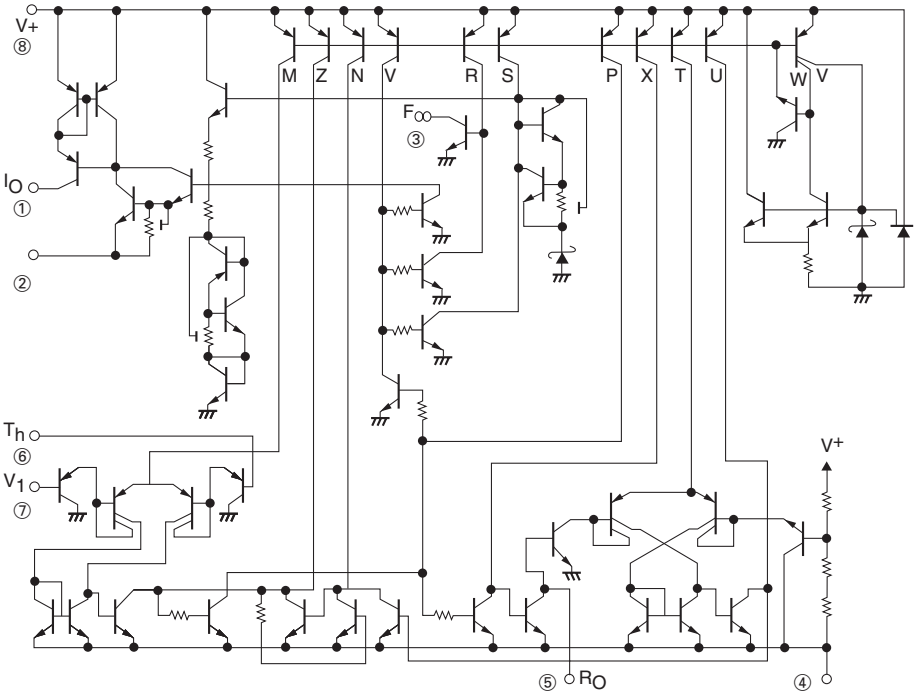
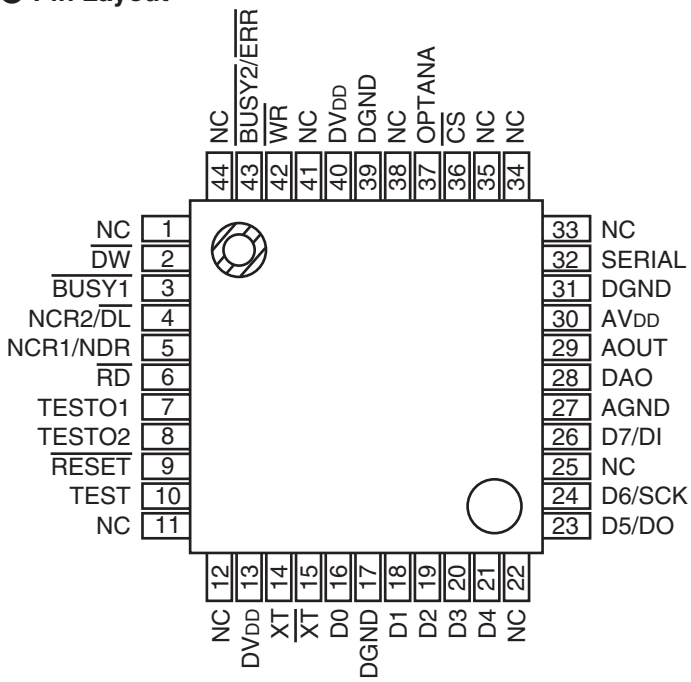


PM8003A

● Pin Layout



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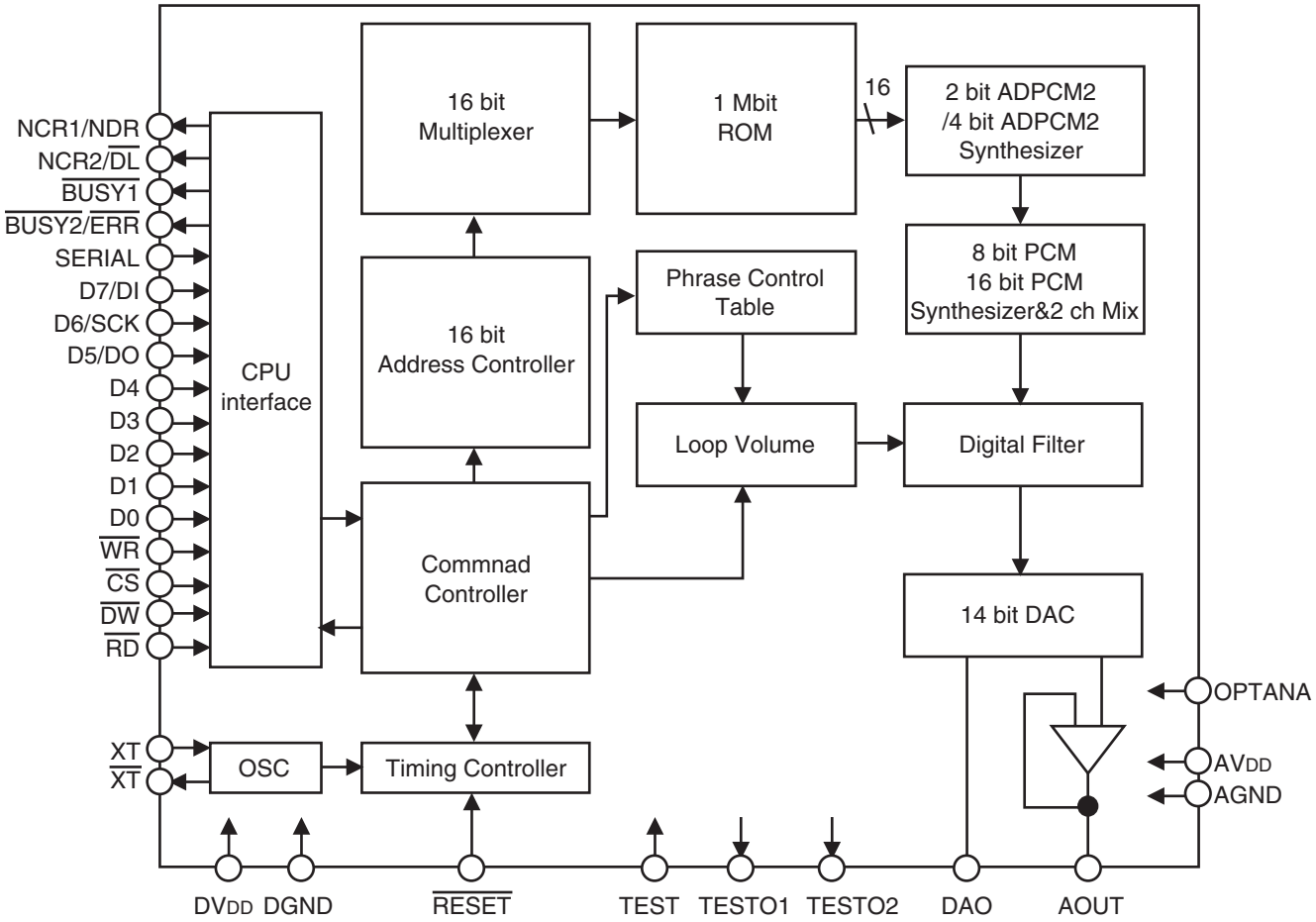


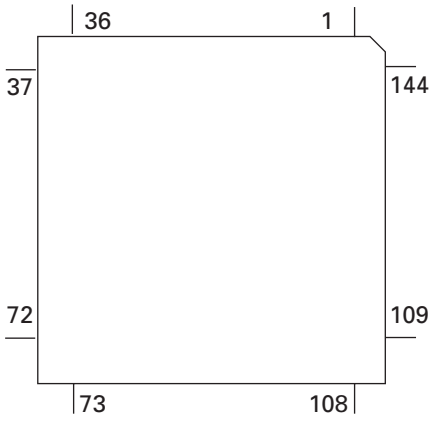
● **Pin Functions(PEG260A, PEG261A)**

Pin No.	Pin Name	I/O	Function and Operation
1	DPDT	O	GRILLE : Data output
2	SWVDD	O	GRILLE : Chip enable output
3	OELPW		OEL power supply output
4	NC		Not used
5	MEMDO	O	External memory : Data output
6	MEMDI	I	External memory : Data input
7	MEMCK	O	External memory : Clock output
8	NC		Not used
9	FLPOPN	O	Flap open operation output
10	FLPCLS	O	Flap close operation output
11	FOPNSW	I	Flap open sense input
12	FCLSSW	I	Flap close sense input
13	FLPPW	O	Flap motor operation output
14	NC		Not used
15,16	BYTE1,2	I	Connect to GND
17	NC		Not used
18	ROMDATA	I/O	ROM correction : Data input/output
19	$\overline{\text{RESET}}$	I	Reset input
20	Xout	O	Clock output
21	Vss		GND
22	Xin	I	Clock input
23	Vcc1		Power supply terminal
24	NMI	I	Not used
25	NC		Not used
26	NC		Not used
27	ROMCK	O	ROM correction : Clock output
28	NC		Not used
29	ROMCS	O	ROM correction : Chip select output
30	NC		Not used
31	PEE	O	PEE sound output
32	NC		Not used
33	NC		Not used
34	TUNPCE1	O	TUNER : Chip enable output
35	TUNPCE2	O	TUNER : Chip enable output
36	RX	I	IPBUS : Input
37	TX	O	IPBUS : Output
38	BSO	O	P-BUS output
39	VCC1		Power supply terminal
40	BSI	I	P-BUS input
41	VSS		GND
42	BSCK	O	P-BUS clock output
43	NC		Not used
44	BTTX	O	BT driver : Data output
45	BTRX	I	BT driver : Data input
46	RTS0	O	BT driver : RTS output
47	BTCTS	I	BT driver : CTS input
48	NC		Not used
49	TUNPDI	I	TUNER : PLL data input
50	TUNPDO	O	TUNER : PLL data output
51	TUNPCK	O	TUNER : PLL clock output
52	AUIWR	O	AUI : Write signal output
53	AUICS	O	AUI : Chip select output
54	AUISDO	O	AUI : Data output
55	AUISCK	O	AUI : Serial clock output
56	AUIRST	O	AUI : Reset output
57	VSS		GND
58	MUTE	O	System mute output

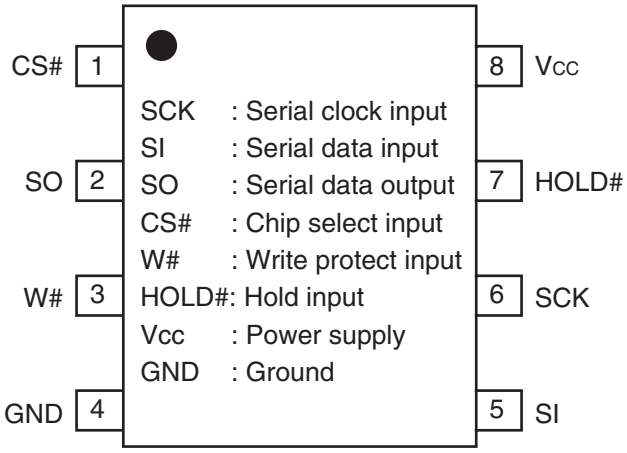
Pin No.	Pin Name	I/O	Function and Operation
59	VCC		Power supply terminal
60	EVOLCS	O	EVOL : Chip select output
61	FCKSEL	O	EVOL : Freguency select output
62	PCL	O	Output for clock adjustment
63	AUIBUSY	I	AUI : Busy input
64	IPPW	O	IPBUS : Driver power supply control output
65	ASENBO	O	IPBUS : Slave ACC sense output
66	MICSENS	I	Microphone sense input
67	AUIMUTE	O	AUI : Mute output
68	NC		Not used
69	DSPCLR	O	DSP : RAM clear request output
70	DSPDRDY	I	DSP : Data write ready input
71	DSPIRST	O	DSP : Reset output
72	CKRST	O	DSP : Clock reset output
73	DSPRST	O	DSP : System reset output
74	VCC		Power usupply terminal
75	DSPRQ	O	DSP : Interface request output
76	VSS		GND
77	SMODE	O	Mode select output H : Master L : Slave
78	BTHF_AEQ	O	Source select output H : AUTO EQ L : Bluetooth H/F
79	$\overline{\text{BRSQ}}$	I	P-BUS : Service request input
80	$\overline{\text{BRST}}$	O	P-BUS : Reset output
81	$\overline{\text{BRXEN}}$	I/O	P-BUS : Reception enable input/output
82	LRCKOK	I	LR clock OK information input
83	RST2	O	CD reset output
84	MCKRQ	I	Master clock request input
85	NC		Not used
86	MEMCS	O	External memory : Chip select output
87	MEMWP	O	External memory : Write protect output
88	DSPIN	I	DSP : Data input
89	DSPCK	I/O	DSP : Clock input/output
90	DSPOUT	O	DSP : Data output
91	VCC		Power supply terminal
92	AMPPW	O	Amp power supply control output
93	VSS		GND
94	BTRST	O	BT driver : Reset output
95	BTTEST	O	BT driver : RF test output
96	BTMUTE	O	Mute output for Bluetooth sound codec
97	BTPW	O	BT driver : Power supply ON/OFF output
98	DALMON	O	For consumption current reduction output
99	SYSPW	O	System power control output
100	DSPPW	O	DSP : Power control output
101,102	NC		Not used
103	$\overline{\text{ASENS}}$	I	ACC sense input
104	$\overline{\text{BSENS}}$	I	Back up sense input
105	ISENS	I	Illumination sense input
106	NC		Not used
107	KEYD	I	Wired remote control key input
108	MODEL	I	Model select select input
109	BTEXIST	I	Bluetooth model select input
110	BTAN_AUX	O	Source select output(Bluetooth AV profile/AUX)
111	ILMPW	O	Illumination output
112	FLPILM	O	Illumination output inside flap
113-122	NC		Not used
123	TELIN	I	Mobile phone mute input
124	ROT1	I	Rotary encoder pulse input
125	ROT0	I	Rotary encoder pulse input

Pin No.	Pin Name	I/O	Function and Operation
126	TESTIN	I	Test program input
127-129	NC		Not used
130	VSS		GND
131	NC		Not used
132	VCC		Power supply terminal
133	NC		Not used
134	BATIND	I	Battery indicator input
135	KEYAD	I	Wired remote control analog voltage input
136	GAUGE		Gauge input
137	$\overline{\text{DSENS}}$	I	Detach sense input
138	NC		Not used
139	ASLIN	I	ASL input
140	AVSS		A/D converter ground
141	SL	I	TUNER : Signal level input
142	VREF		A/D converter reference voltage
143	AVCC		A/D converter power supply input terminal
144	KYDT	I	GRILLE : Data input

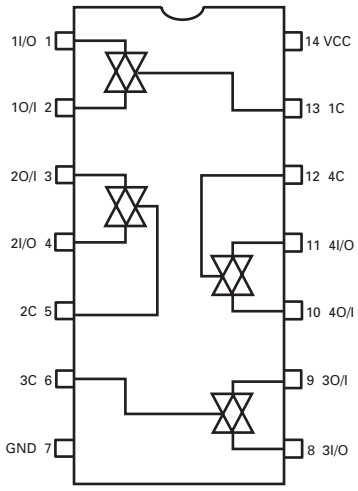
PEG260A(DEH-P980BT/XN/UC, DEH-P9800BT/XN/UC)
PEG261A(DEH-P9850BT/XN/ES)



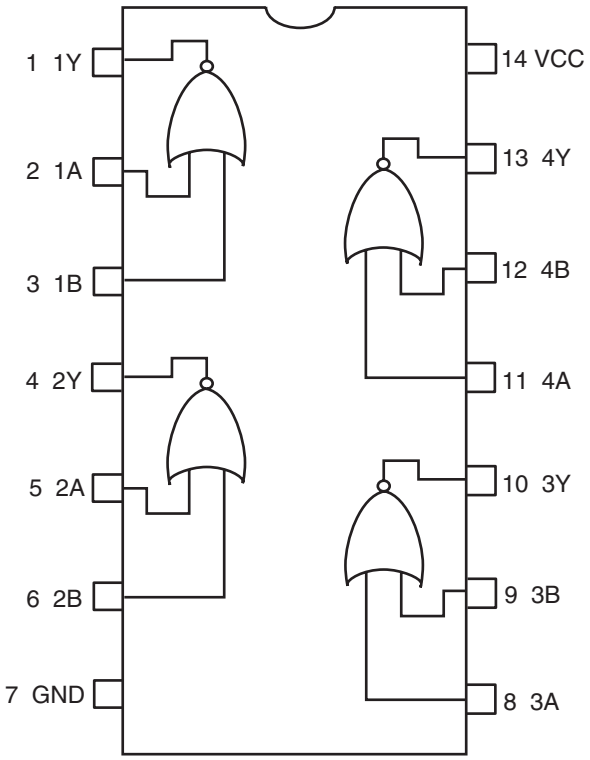
S99-50084



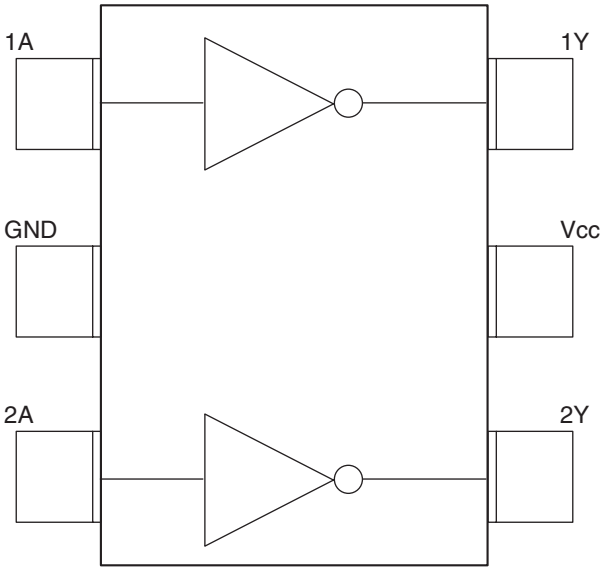
TC4066BFT



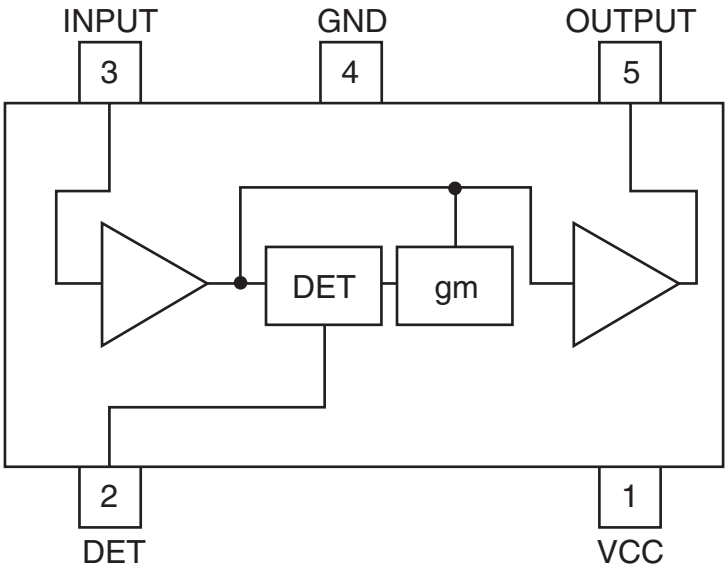
TC74VHC02FTS1



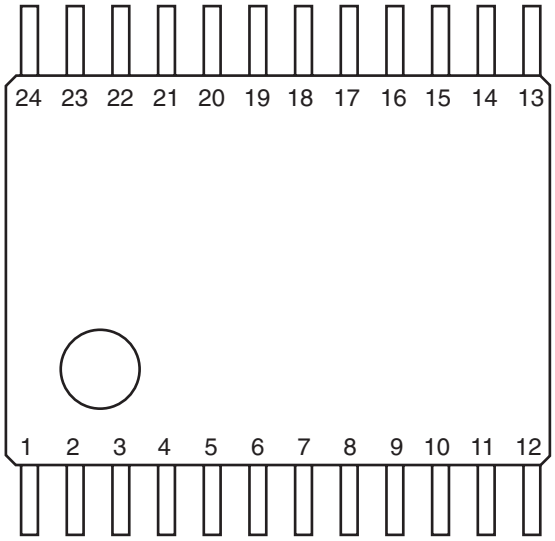
TC7PAU04FU



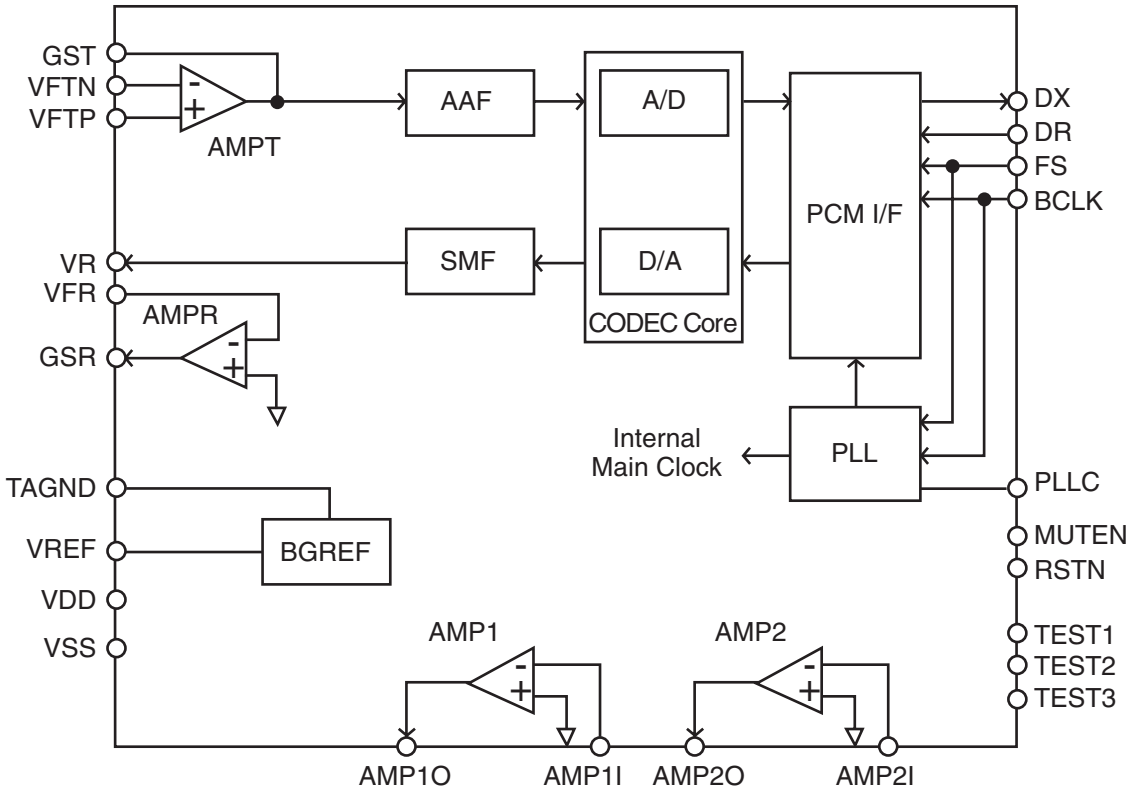
AN6123MS



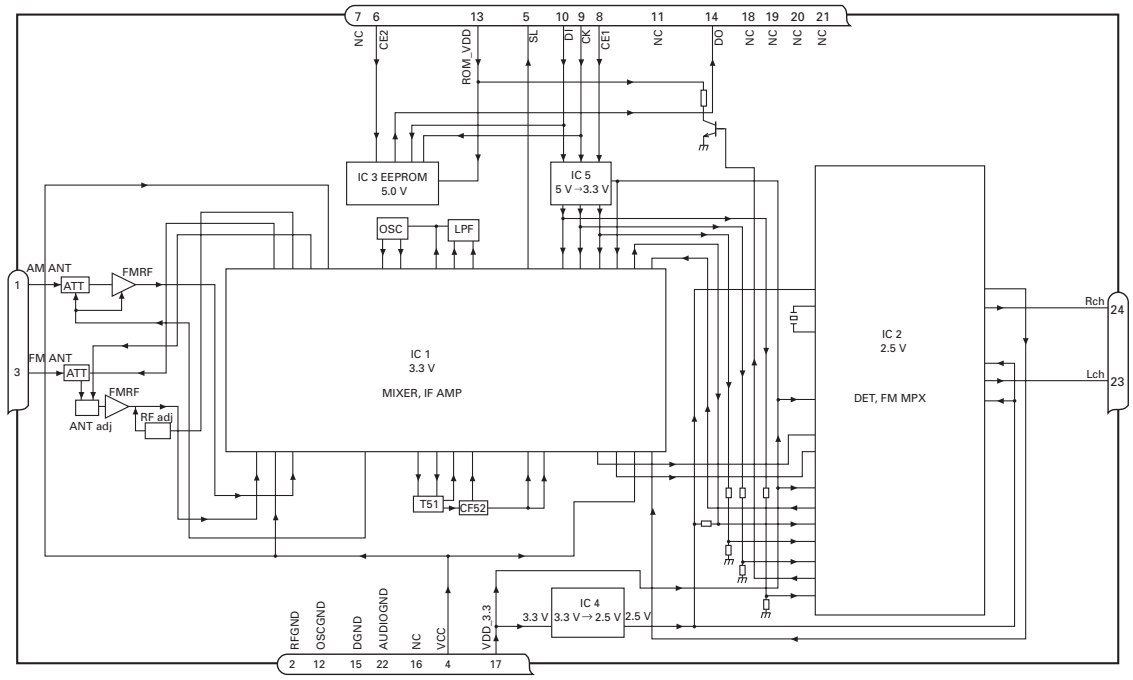
● Pin Layout



● Block Diagram

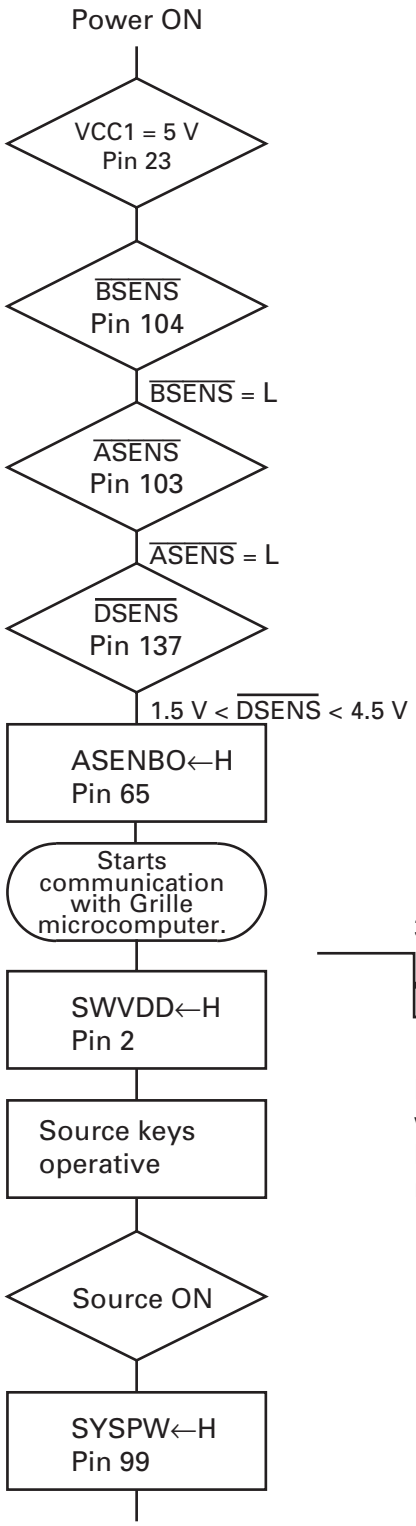


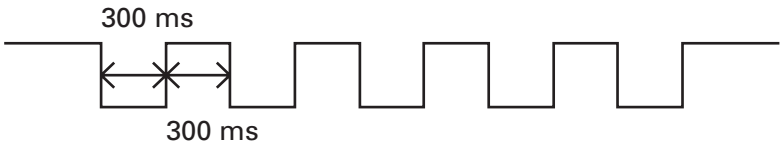
● FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μH. (LAU type inductor)A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V± 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	NC		non connection	Not used
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V ± 0.2 V
18	NC		non connection	Not used
19	NC		non connection	Not used
20	NC		non connection	Not used
21	NC		non connection	Not used
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

7.3 OPERATIONAL FLOW CHART

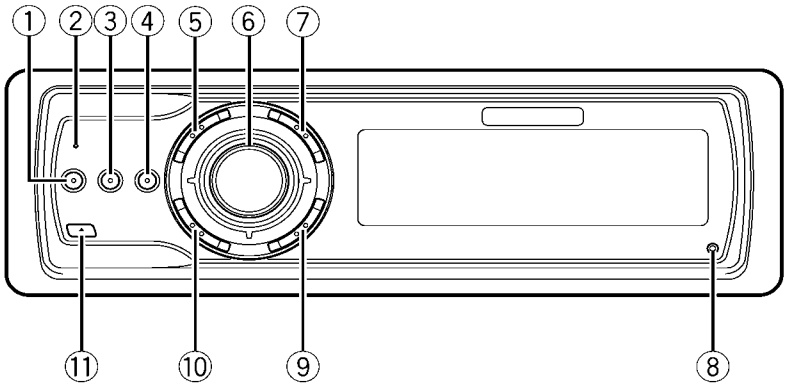




In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300 msec, the oscillator may be defective.

Completes power-on operation.
(After that, proceed to each source operation)

8. OPERATIONS



Head unit

① **EQ button**
Press to select various equalizer curves.

② **Connection status indicator**
Lights up when your cellular phone is connected via Bluetooth wireless technology.

③ **DISPLAY button**
Press to select different displays.

④ **CLOCK button**
Press to change to the clock display.

⑤ **PHONE button**
Press to select the phone as the source.
While operating a phone source, press to end a call, reject an incoming call or cancel making a call.

⑥ **MULTI-CONTROL**
Move to perform manual seek tuning, fast forward, reverse and track search controls.
Also used for controlling functions.
Turn to increase or decrease the volume.

⑦ **LIST button**
Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

⑧ **RESET button**
Press to reset the microprocessor.

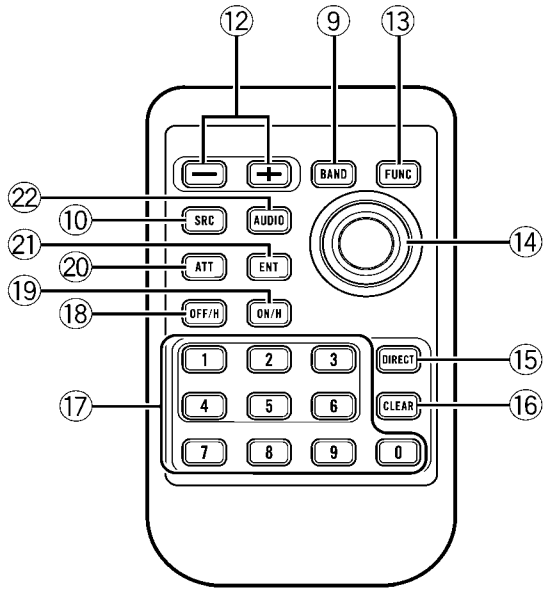
⑨ **BAND button**
Press to select among three FM bands and one AM band and to cancel the control mode of functions.

⑩ **SOURCE button**
This unit is turned on by selecting a source.
Press to cycle through all the available sources.

⑪ **EJECT button**
Press to eject a CD from your built-in CD player.
Press and hold to open or close the front panel.

Remote control

Operation is the same as when using the buttons on the head unit.



⑫ VOLUME buttons

Press to increase or decrease the volume.

⑬ FUNCTION button

Press to select functions.

⑭ Joystick

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Functions are the same as **MULTI-CONTROL** except for volume control.

⑮ DIRECT button

Press to directly select the desired track.

⑯ CLEAR button

Press to cancel the input number when **0–9** are used.

⑰ 0–9 buttons

Press to directly select the desired track, preset tuning or disc. Buttons **1–6** can operate the preset tuning for the tuner or disc number search for the multi-CD player.

⑱ OFF HOOK button

Press to start talking on the phone while operating a phone source.

⑲ ON HOOK button

While operating the phone source, press to end a call or reject an incoming call.

⑳ ATT button

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

㉑ ENTERTAINMENT button

Press to change to the entertainment display.

㉒ AUDIO button

Press to select various sound quality controls. ■

Turning the unit on

● **Press SOURCE to turn the unit on.**

When you select a source, the unit is turned on.

Selecting a source

You can select a source you want to listen to. To switch to the built-in CD player, load a disc in the unit.

● **Press SOURCE to select a source.**

Press **SOURCE** repeatedly to switch between the following sources:

XM tuner—SIRIUS tuner—Tuner—Television—DVD player/Multi-DVD player—Built-in CD player—Multi-CD player—iPod—External unit 1—External unit 2—AUX1—AUX2—Telephone—BT Audio

Notes

- In the following cases, the sound source will not change:
  - — When there is no unit corresponding to the selected source connected to this unit.
  - — When there is no disc in the unit.
  - — When there is no disc in the DVD player.
  - — When there is no magazine in the multi-CD player.
  - — When there is no magazine in the multi-DVD player.
  - — When the AUX (auxiliary input) is set to off.
  - — When the **BT Audio** source is set to off.
- External unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this unit. Two external units can be controlled by this unit. When two external units are connected, the allocation of them to external unit 1 or external unit 2 is automatically set by this unit.
- When this unit's blue/white lead is connected to the vehicle's auto-antenna relay control terminal, the vehicle's antenna extends when this unit's source is turned on. To retract the antenna, turn the source off.

Loading a disc

1 Press EJECT to open the front panel.

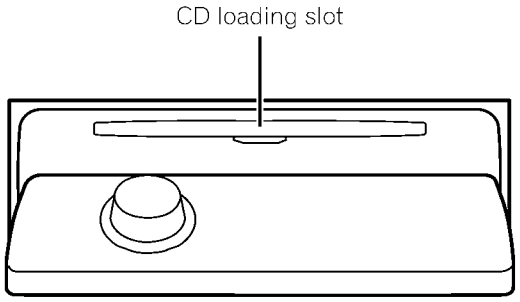
CD loading slot appears.

■ After a CD has been inserted, press **SOURCE** to select the built-in CD player.

2 Insert a CD into the CD loading slot.

Front panel is closed automatically, and playback will start.

- With jacket art function on, jacket arts on CD-ROM disc are automatically read in this unit when the disc is inserted. To cancel reading jacket arts, press **BAND**.



■ You can eject a CD by pressing **EJECT**.

Notes

- The built-in CD player plays one standard, 12-cm or 8-cm CD at a time. Do not use an adapter when playing 8-cm CDs.
- Do not insert anything other than a CD into the CD loading slot.

- There is sometimes a delay between starting up CD playback and the sound being issued. When being read, **Format read** is displayed.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting it again.
- When the CD loading or ejecting function does not operate properly, you can eject the CD by pressing and holding **EJECT** while opening the front panel.
- If an error message such as **ERROR-11** is displayed. ▣

Adjusting the volume

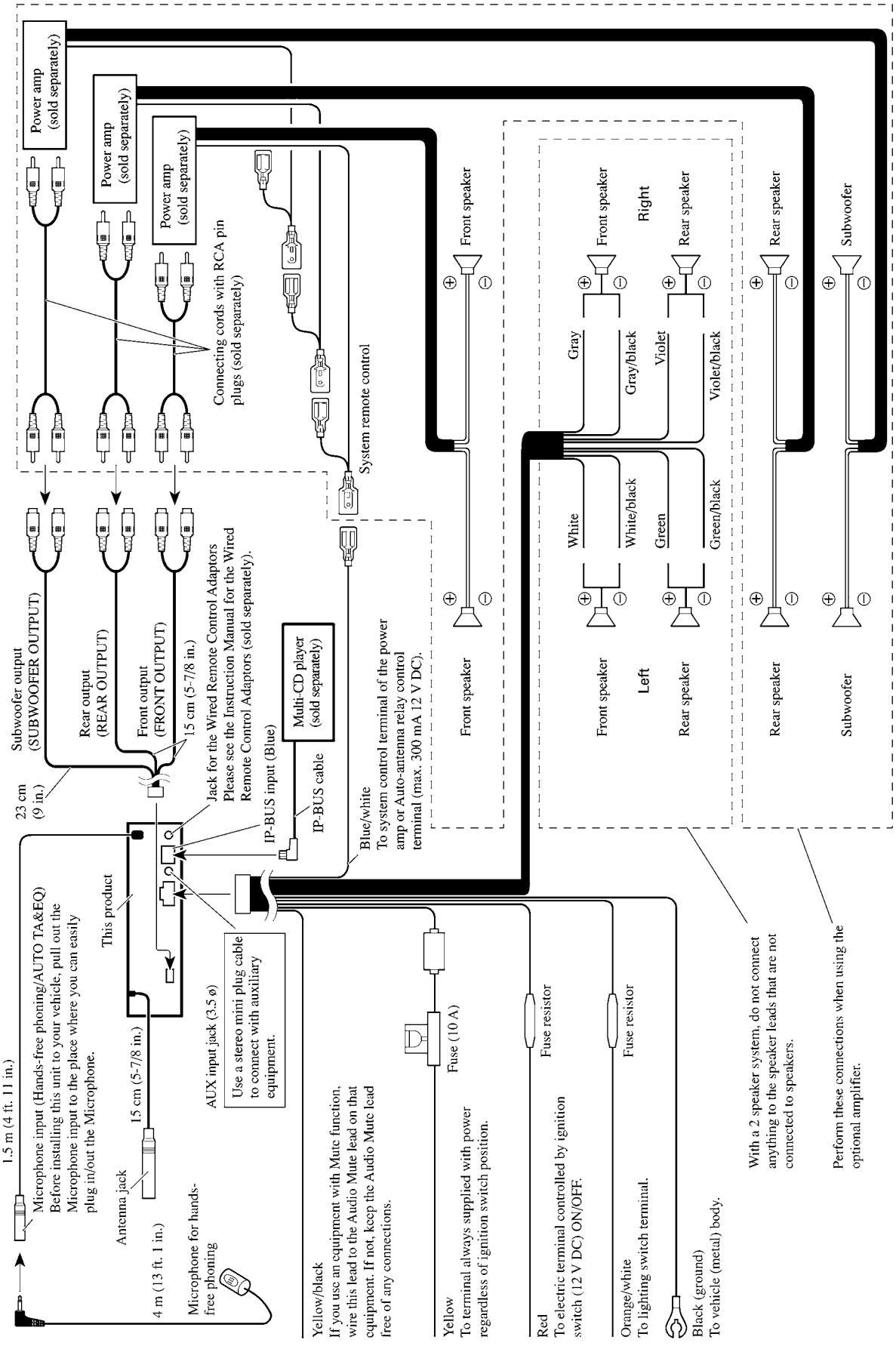
● **Use MULTI-CONTROL to adjust the sound level.**

With the head unit, turn **MULTI-CONTROL** to increase or decrease the volume.
With the remote control, press **VOLUME** to increase or decrease the volume. ▣

Turning the unit off

● **Press SOURCE and hold until the unit turns off.** ▣

Connection Diagram



A

B

C

D

E

F

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)
	GGF1539	Removing the cord assy(BT antenna cable)

● Grease List

Name	Jig No.	Remarks
Grease	GEM1024	CD Mechanism Module, Drive Unit
Grease	GEM1045	CD Mechanism Module
Grease	GEM1069	Drive Unit

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

Pioneer sound.vision.soul

Service Manual

ORDER NO.
CRT3583

CD MECHANISM MODULE(S10.5COMP1)

CX-3164

This service manual describes the operation of the CD mechanism module incorporated in models listed in the table below.
When performing repairs use this manual together with the specific manual for model under repair.

Model	Service Manual	CD Mechanism Module
DEH-2800MP/XN/UC DEH-2850MP/XN/ES	CRT3554	CXK5752
DEH-2800MP/XN/EW DEH-2800MPB/XN/EW DEH-2820MP/XN/EW DEH-281MP/XN/EW	CRT3555	CXK5752
DEH-3850MP/XU/ES DEH-3850MPH/XU/GS DEH-3850MP/XU/CN	CRT3556	CXK5750
DEH-P3800MP/XU/UC	CRT3557	CXK5750
DEH-P4800MP/XU/EW	CRT3558	CXK5750
DEH-P580MP/XN/UC DEH-P5800MP/XN/UC	CRT3563	CXK5752
DEH-P6800MP/XN/EW	CRT3564	CXK5752
DEH-P5850MP/XN/ES DEH-P5850MPH/XN/GS	CRT3565	CXK5752
DEH-P480MP/XU/UC DEH-P4800MP/XU/UC	CRT3566	CXK5750
DEH-P4850MP/XU/ES DEH-P4850MPH/XU/GS DEH-P4850MP/XU/CN	CRT3567	CXK5750
DEH-P680MP/XN/UC DEH-P6800MP/XN/UC DEH-P6850MP/XN/ES	CRT3569	CXK5752

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PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZA. OCT. 2005 Printed in Japan

CONTENTS

1. CIRCUIT DESCRIPTIONS

UPD63763CGJ, multifunctional LSI used in this device, has built-in CD-ROM decoder and MP3/WMA decoder, as shown in Fig.1.0.1, as well as the conventional CD block, allowing to play CD-ROMs, in which MP3/WMA files are recorded, while the recent mainstay of the CD LSI is the LSI integrating the core DSP with DAC or RF amplifier, which are generally used as peripheral circuits.

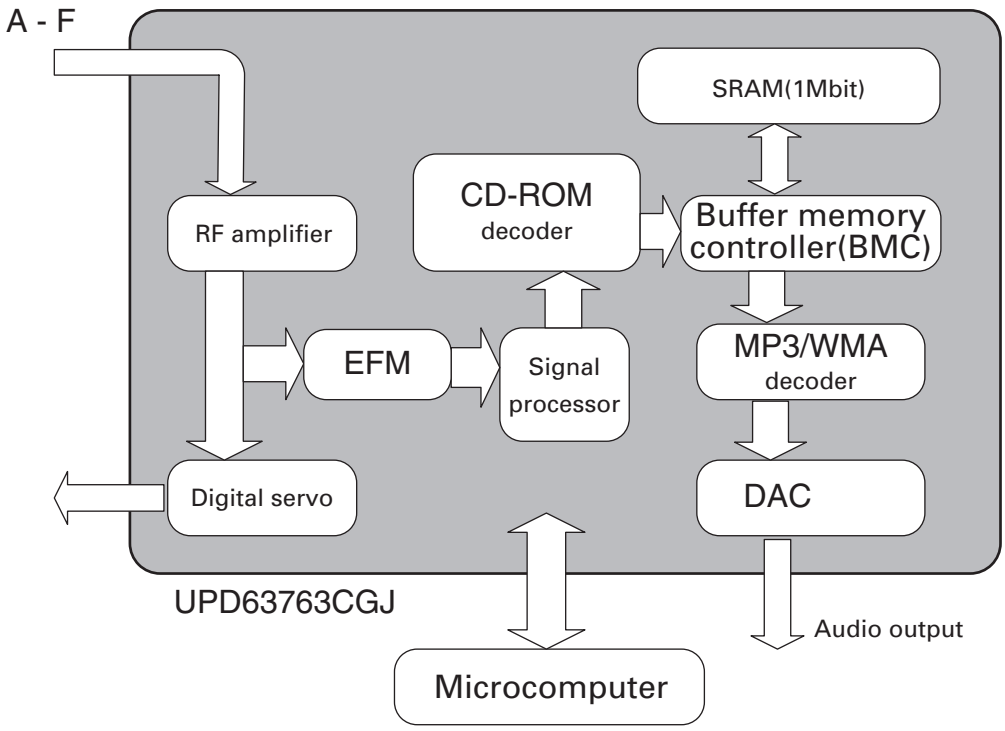


Fig.1.0.1 Block diagram of CD LSI UPD63763CGJ

1.1 PREAMPLIFIER BLOCK (UPD63763CGJ: IC201)

In the preamplifier block, the pickup output signals are processed to generate signals that are used in the subsequent blocks: servo, demodulator, and control blocks. Signals from the pickup are I/V converted in the pickup with the preamplifier with built-in photo detectors, and after added with the RF amplifier, they are used to produce such signals as RF, FE, TE, and TE zero-cross signals. The preamplifier block is built in CD LSI UPD63763CGJ (IC201), whose parts are described individually below. Incidentally, as this LSI employs a single power supply (+ 3.3 V) specification, the reference voltages of this LSI and the pickup are the REFO (1.65 V) for both. The REFO is an output obtained from REFOUT in the LSI via the buffer amplifier, and is output from the pin 133 of this LSI. All measurements will be performed with this REFO as the reference.

Caution: Be careful not to short-circuit the REFO and GND when measuring.

1.1.1 APC (Automatic Power Control) circuit

Since laser diodes have extremely negative temperature characteristics in optical output when driven in constant current, it is necessary to control the current with the monitor diodes in order to keep the output constant. This is the feature of the APC circuit. The LD current is obtained by measuring the voltage between LD1 and V3R3D(+ 3.3 V), and divide the value by 7.5 (ohms), which becomes about 30 mA.

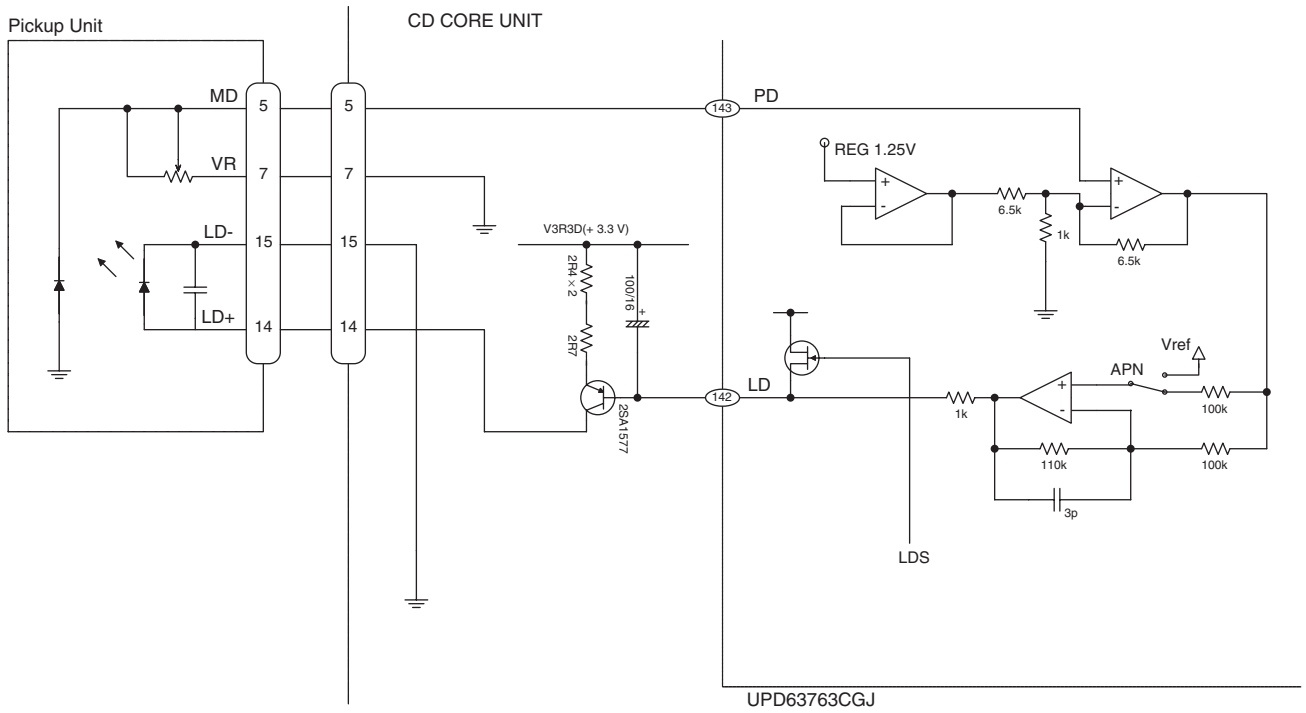


Fig.1.1.1 APC

1.1.2 RF and RFAGC amplifiers

The output from the photo-detector (A + C) and (B + D) is provided from the RFO terminal as the RF signal (which can be used for eye-pattern check), after it is added, amplified, and equalized inside this LSI. The low frequency component of the voltage RFO is calculated as below.

RFO = (A + B + C + D) x 2

The RFO is used for the FOK generation circuit and RF offset adjustment circuit.

The RFO signal, output from the pin 119, is A/C-coupled externally, input to the pin 118, and amplified in the RFAGC amplifier to obtain the RFAGC signal.

Also, this LSI is equipped with the RFAGC auto-adjustment function, explained below, which switches feedback gains of the RFAGC amplifier so that the RFO output will be 1.5 V.

This RFO signal is also used for the EFM, DFCT, MIRR, and RFAGC auto-adjustment circuits.

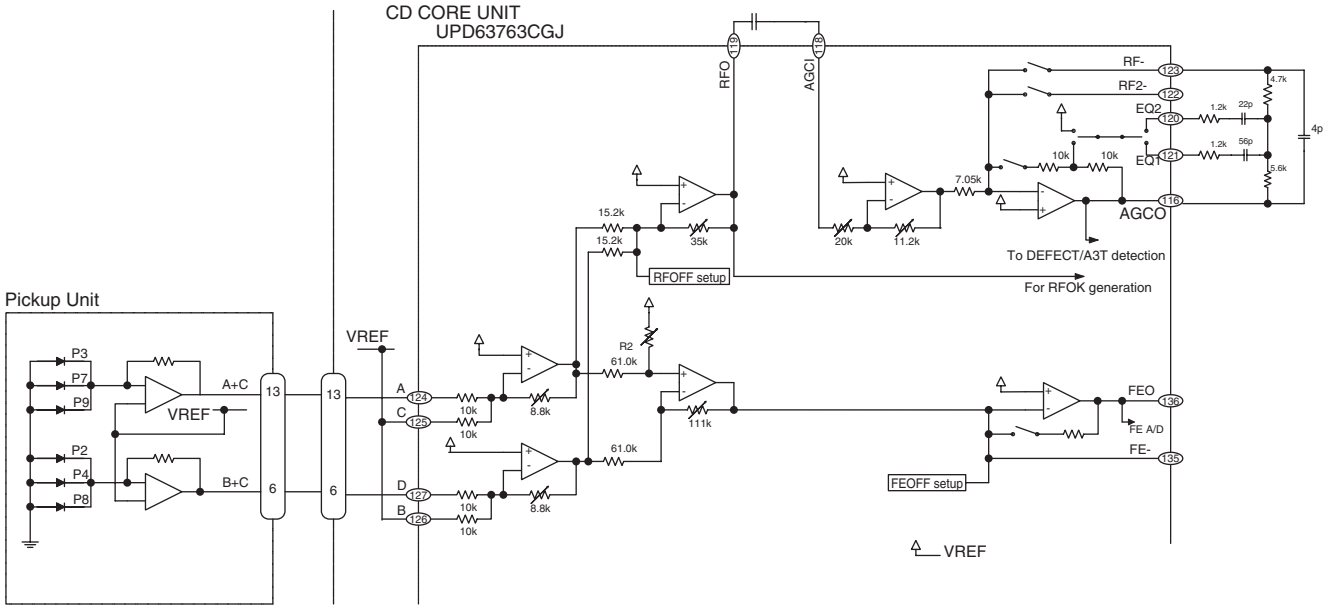


Fig.1.1.2 RF/AGC/FE

1.1.3 Focus error amplifier

The photo-detector outputs (A + C) and (B + D) are passed through the differential amplifier and the error amplifier, and (A + C - B - D) is provided from the pin 136 as the FE signal. The low frequency component of the voltage FE is calculated as below.

FE = (A + C - B - D) x 8.8k / 10k x 111k / 61k x 160k / 72k

= (A + C - B - D) x 3.5

For the FE outputs, an S-shaped curve of 1.5 Vp-p is obtained with the REFO as the reference. The cutoff frequency for the subsequent stage amplifiers is 14.6 kHz.

1.1.4 RFOK circuit

This circuit generates the RFOK signal, which indicates the timing to close the focus loop and focus-close status during the play mode, from the pin 55. As for the signal, "H" is output in closing the focus loop and during the play mode.

Additionally, the RFOK becomes "H" even in a non-pit area, since the DC level of the RFO signal is peak-held in the subsequent digital block and compared at a certain threshold level to generate the RFOK signal. Therefore, the focus is closed even on a mirror-surface area of a disc. This signal is also supplied to the microcomputer via the low-pass filer as the FOK signal, which is used for protection and gain switching of the RF amplifier.

1.1.5 Tracking error amplifier

The photo-detector outputs E and F are passed through the differential amplifier and the error amplifier to obtain (E - F), and then provided from the pin 139 as the TE signal. The low frequency component of the voltage TE is calculated as below.

TEO = (E - F) x 63k / 112k x 160k / 160k x 181k / 45.4k x 160k / 80k

= (E - F) x 4.48

For the TE output, TE waveform of about 1.3 Vp-p with the REFO as the reference. The cutoff frequency in the subsequent is 21.1 kHz.

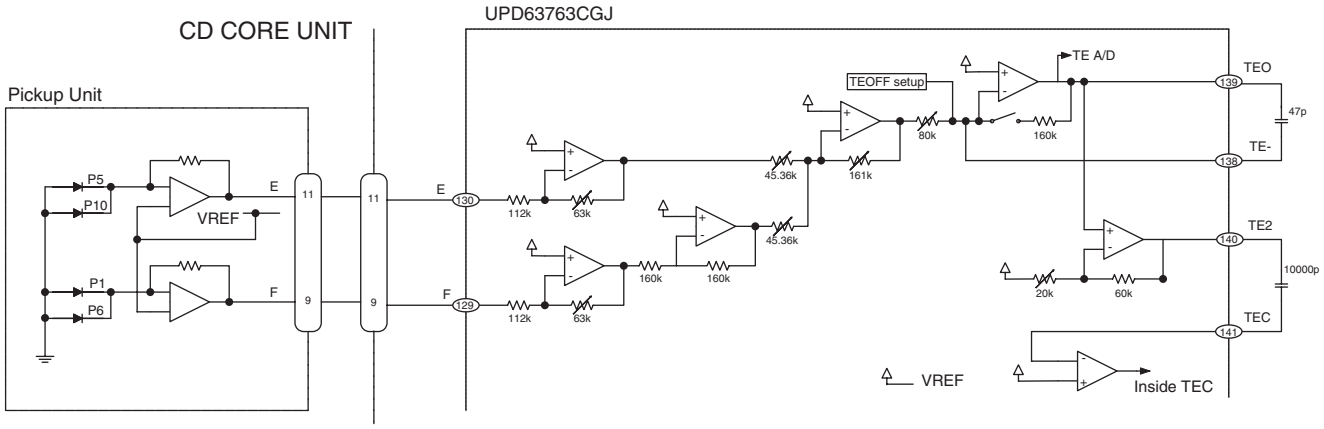


Fig.1.1.3 TE

1.1.6 Tracking zero-cross amplifier

The tracking zero-cross signal (hereinafter referred to as TEC signal) is obtained by amplifying the TE signal by fourfold, and used to detect the tracking-error zero-cross point. As the purpose of detecting the zero-cross point, the following two points can be named:

1. To use for track-counting in the carriage move and track jump modes
2. To use for detecting the direction in which the lens moves in tracking close. (Used in the tracking brake circuit to be explained later.)

The frequency range of the TEC signal is from 300 Hz to 20 kHz, and

TEC voltage = TE level x 4

The TEC level can be calculated at 4.62 V, which, at this level, exceeds the D range of the operational amplifier, and clips the signal, but, because the CD LSI only uses the signal at the zero-cross point, it poses no particular problem.

1.1.7 EFM circuit

The EFM circuit converts the RF signal into digital signals of 0 and 1. The AGCO signal output from the pin 116 is A/C-coupled externally, input to the pin 114, and supplied to the EFM circuit.

Missing RF signal due to scratches and stains on the disc, and asymmetry of the upper and lower parts of the RF, caused by variation in disc production, cannot be entirely eliminated in AC coupling process, the reference voltage ASY of the EFM comparator is controlled, using the probability that 0 and 1 occur at 50%. Thus, the comparator level will always stay around the center of the RFO signal. This reference voltage ASY is generated by passing the EFM comparator output through the low-pass filter. The EFM signal is output from the pin 111.

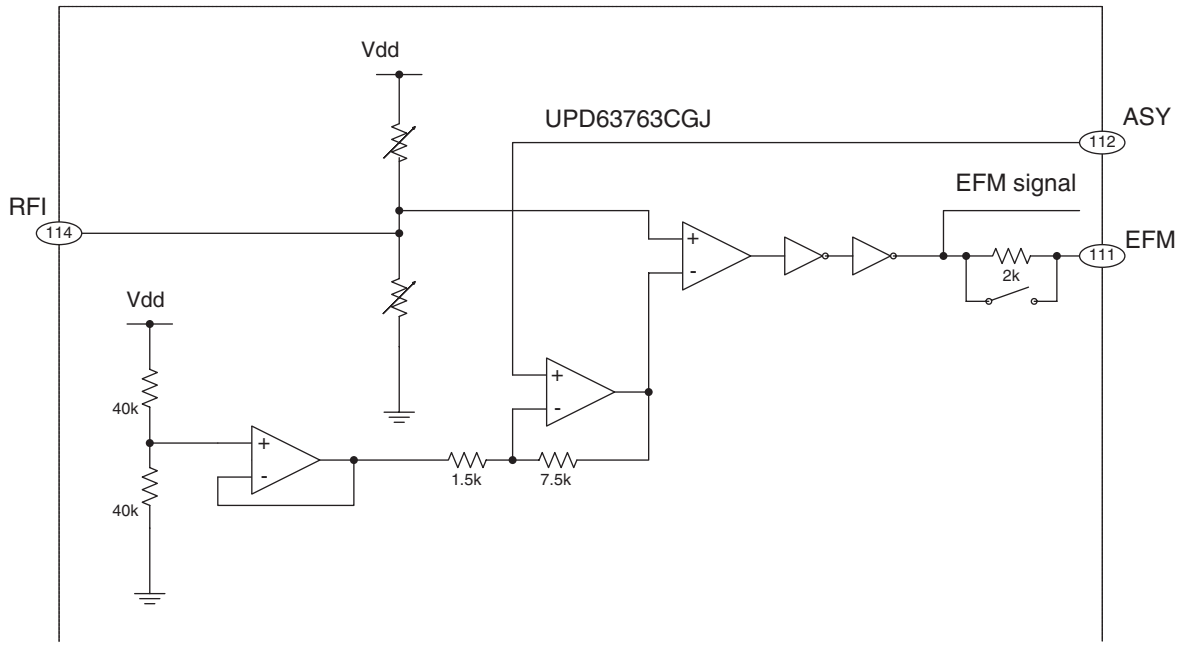


Fig.1.1.4 EFM

1.2 SERVO BLOCK (UPD63763CGJ: IC201)

The servo block performs servo control such as error signal equalizing, in-focus, track jump and carriage move. The DSP block is the signal-processing unit, where data decoding, error correction, and compensation are performed. The FE and TE signals, generated in the preamplifier stage, are A/D-converted, and output drive signals for the focus, tracking, and carriage systems via the servo block. Also, the EFM signal is decoded in the signal-processing unit, and ends up in outputting D/A-converted audio signals through the D/A converter. Furthermore, in this decoding process, the spindle servo error signal is generated, supplied to the spindle servo block, and used to output the spindle drive signal.

Each drive signal for focus, tracking, carriage, and spindle servos (FD, TD, SD, and MD) are output as PWM3 data, and then converted to analog data through the LPF. These drive signals, after changed to analog form, can be monitored with the FIN, TIN, CIN, and SIN signals, respectively. Subsequently, the signals are amplified and supplied to the actuator and motor for each signal.

1.2.1 Focus servo system

The main equalizer of the focus servo consists of the digital equalizer block. The figure 1.2.1 shows the block diagram of the focus servo system.

In the focus servo system, it is necessary to move the lens within the in-focus range in order to close the focus loop. For that purpose, the in-focus point is looked for by moving the lens up and down with the focus search voltage of triangular signal. During this time, the rotation of the spindle motor is retained at a certain set speed by kicking the spindle motor.

The servo LSI monitors the FE and RFOK signals and automatically performs the focus-close operations at an appropriate timing. The focus-close operation is performed when the following three conditions are satisfied at the same time:

1) The lens moves toward the disc surface.
2) RFOK = "H"
3) The FE signal is zero-crossed.

Consequently, the FE converges to "0" (= REFO).

When the above-mentioned conditions are met and the focus loop is closed, the FSS bit is shifted from "H" to "L," and then, in 10 ms, the microcomputer starts monitoring the RFOK signal obtained through the low-pass filter.

If the RFOK signal is determined to be "L," the microcomputer takes several actions including protection.

Fig.1.2.2 shows a series of actions concerning the focus close operations. (It shows a case where the focus loop cannot be closed.)

With the focus mode selector displaying 01 in the test mode, pressing the focus close button, allows to check the S-shaped curve, search voltage, and actual lens behavior.

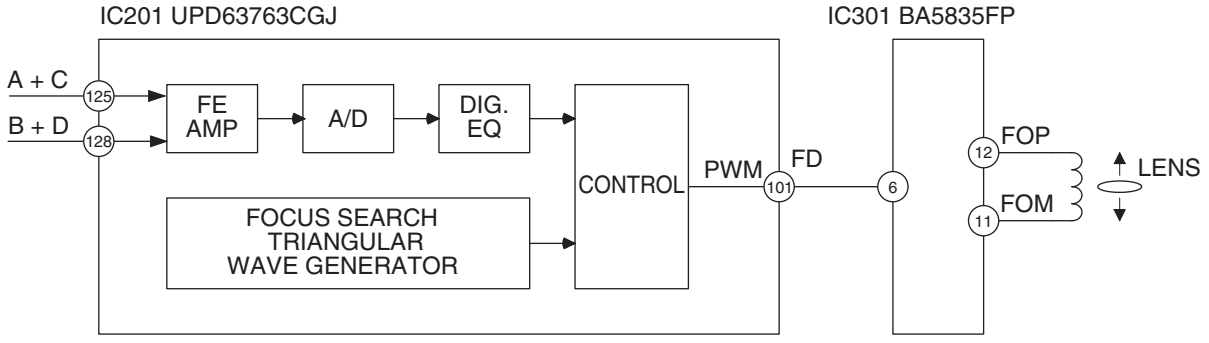


Fig.1.2.1 Block diagram of the focus servo system

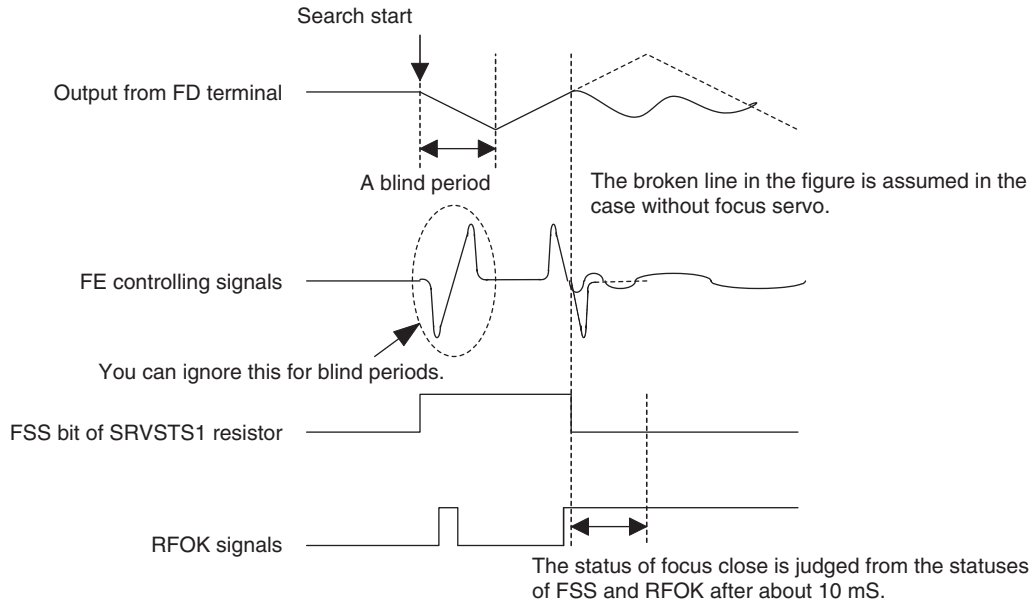


Fig.1.2.2 Timing chart for focus close operations

1.2.2 Tracking servo system

The main equalizer of the tracking servo consists of the digital equalizer block. The figure 1.2.3 shows the block diagram of the tracking servo system.

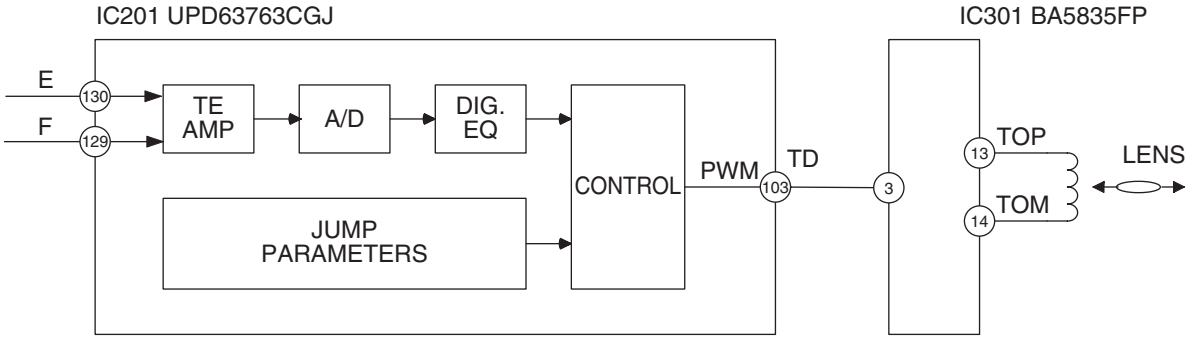


Fig.1.2.3 Block diagram of the tracking servo system

(a) The track jump operation is automatically performed by the auto-sequence function inside the LSI with a command from the microcomputer. For the track jumps used in the search mode, a single track jump and four to 100 multi-track jump are available in this system. In the test mode, out of these track jumps, 1, 32, and 32 * 3 track jumps, as well as carriage move can be performed and checked in mode selection. In a track jump, the microcomputer sets about half the number of the total tracks to jump (about five tracks for a 10-track jump), and the set number of tracks are counted using the TEC signal. By outputting the brake pulse for a certain period of time (set by the microcomputer) from the time the set number is counted, and stopping the lens, the tracking loop can be closed so that the normal play can be continued.

Also, in order to facilitate closing of the tracking loop in a track jump, the brake circuit is kept ON for 50 msec, after the brake pulse is stopped, for increasing the tracking servo gain. The FF/REW action in the normal operation mode is realized by performing single jumps consecutively. The speed is approximately 10 times faster than in the normal mode.

(b) Brake circuit

Since the servo loop is not closed very well in the setup mode and track jump mode, the brake circuit is used for stabilizing the servo-loop close operation. The brake circuit detects the direction in which the lens moves, and outputs only the drive signal for the direction opposite to the movement to slow down the lens, thereby stabilizing the tracking servo-loop close operation. Additionally, the off-track direction is determined from the TEC and MIRR signals, as well as their phase relation.

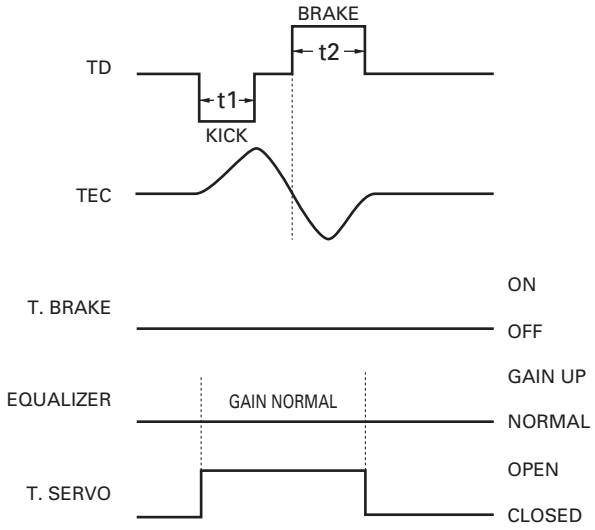


Fig.1.2.4 Single-track jump

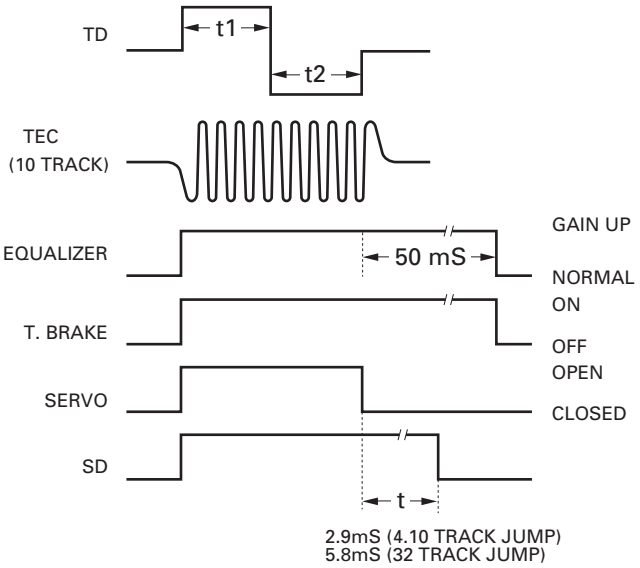
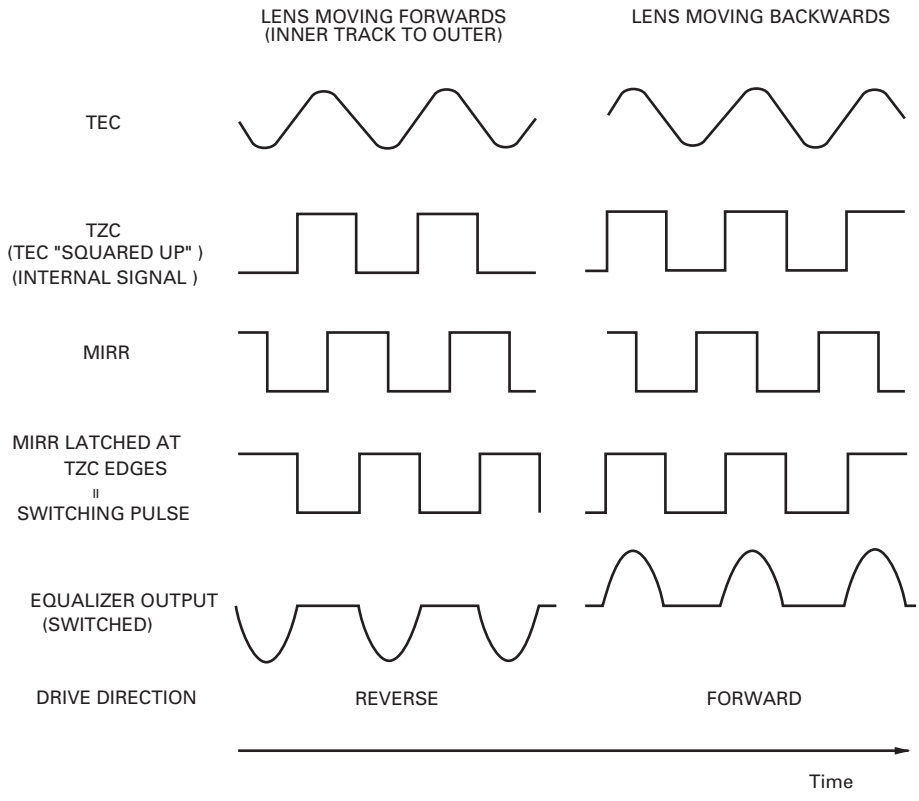


Fig.1.2.5 Multi-track jump



Note : Equalizer output assumed to hava same phase as TEC.

Fig.1.2.6 Track brake

1.2.3 Carriage servo system

The carriage servo system inputs the output of the low frequency component from the tracking equalizer (information on the lens position) to the carriage equalizer, and, after the gain is increased to a certain level, outputs the drive signal from the LSI. This signal is applied to the carriage motor via the driver IC.

Specifically, since it is necessary to move the whole pickup to the FORWARD direction when the lens offset reaches a certain level during the play mode, the equalizer gain is set to output higher voltage than the carriage motor starting voltage at this time. In actual operations, a certain threshold level is preset in the servo LSI for the equalizer output, and only when it exceeds the threshold level, the drive voltage will be output. This can reduce the power consumption. Also, before the whole pickup starts moving, the equalizer output voltage may exceed the threshold level a few times, due to such causes as eccentricity of discs. In this case, the output waveform of the drive voltage from the LSI assumes a pulse-like form.

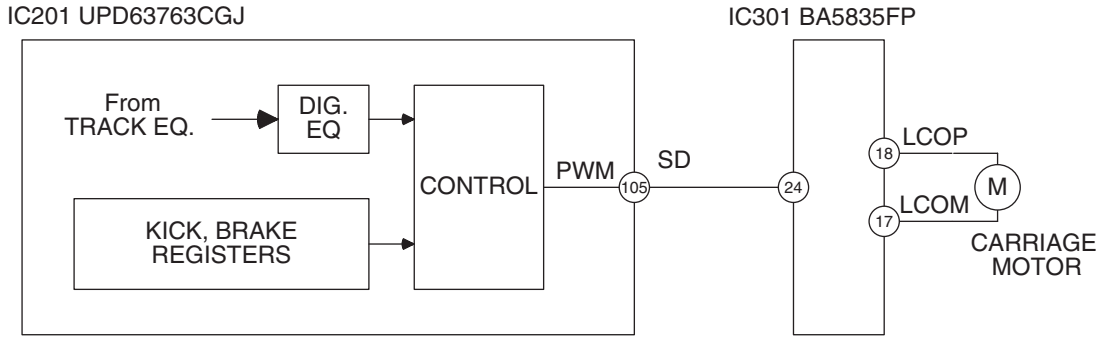


Fig.1.2.7 Block diagram for the carriage servo block

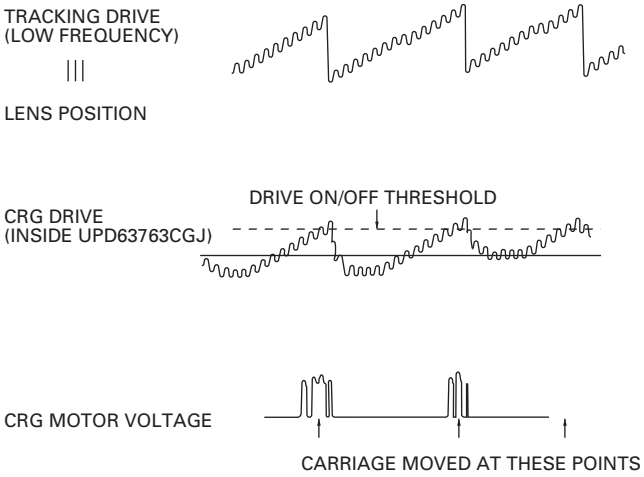


Fig.1.2.8 Waveforms of the carriage signal

1.2.4 Spindle servo system

In the spindle servo system, the following modes are available:

1) Kick

Used to accelerate the disc rotation in the setup mode.

2) Offset

a. Used in the setup mode after the kick mode, until the TBAL adjustment is completed.

b. Used during the play mode when the focus loop is unlocked, until it is locked again.

In both cases, the mode is used to keep the disc rotation approximately normal.

3) Applicable servo

CLV servo mode, used in the normal operation.

In the EFM demodulation block, by WFCK/16 sampling whether the frame sync signal and the internal frame counter output are synchronized, a signal is created to show if they are "in-sync" or "non-sync." The status is not recognized as asynchronous until the signal is "non-sync" for eight consecutive times; otherwise it is recognized as synchronous. In the applicable servo mode, the leading-in servo mode is automatically selected in the asynchronous status, and the normal servo mode in the synchronous status.

4) Brake

Used to stop the spindle motor.

In accordance with the microcomputer's command, the brake voltage is sent out from the servo LSI. At this time, the EFM waveform is monitored in the LSI, and when the longest EFM pattern exceeds a certain interval (or the rotation slows down enough), a flag is set inside the LSI, and the microcomputer switches off the brake voltage. If a flag is not set within a certain period, the microcomputer shifts the mode from the brake mode to the stop mode, and retains the mode for a certain period of time. If the mode switches to this stop mode in the eject operation, the disc will be ejected after the period of time mentioned above elapses.

5) Stop

Used when the power is turned on and during the eject operation. In the stop mode, the voltage in both ends of the spindle motor is 0 V.

6) Rough servo

Used in carriage feed (carriage move mode such as long search).

By obtaining the linear velocity from the EFM waveform, the "H" or "L" level is input to the spindle equalizer. In the test mode, this mode is also used for grating confirmation.

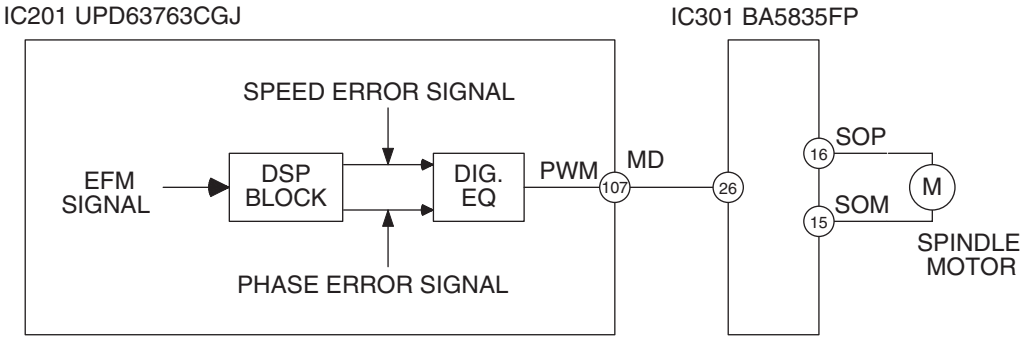


Fig.1.2.9 Block diagram of the spindle servo system

1.3 AUTOMATIC ADJUSTMENT FUNCTION

In this system, all the circuit adjustments are automated inside the CD LSI.
All adjustments are performed whenever a disc is inserted or the CD mode is selected by pressing the source key.
Details of each adjustment will be explained below.

1.3.1 TE, FE, and RF offset auto-adjustment

In this adjustment the TE, FE, and RF amplifier offsets of the preamplifier block in POWER ON are adjusted to the respective target values with the REFO as reference. (The target values for TE, FE, and RF offsets are 0 V, 0 V, and - 0.8 V, respectively.)
Adjusting procedure
1) The microcomputer reads respective offsets through the servo LSI, when they are in LDOFF status.
2) The microcomputer calculates the voltages for correction from the values read in 1), and substitutes the corrected values to prescribed places to adjust.

1.3.2 Tracking balance (T.BAL) auto-adjustment

This adjustment equalizes the output difference of the E-ch and F-ch from the pickup by changing the amplifier gain inside the LSI. In actual operation, adjustment is performed so that the TE waveform becomes symmetrical on each side of the REFO.
Adjusting procedure
1) After closing the focus loop,
2) Kick the lens in the radial direction to ensure the generation of the TE waveform.
3) The microcomputer reads the offset amount of the TE signal calculated in the LSI at the time through the servo LSI.
4) The microcomputer determines the offset amount is 0, positive, or negative.
- When the offset amount is 0, the adjustment is completed.
- When the offset amount is positive or negative, the amp gains for E-ch and F-ch should be changed, following a certain rule.
Then, steps 2) to 4) are repeated until the offset amount becomes 0 or the repetition reaches the limit number of times.

1.3.3 FE bias auto-adjustment

This adjustment is to maximizes the RFO level by optimizing the focus point during the play mode, utilizing the phase difference between the 3T level waveform of the RF waveform and that of when focus error disturbance is input. This adjustment is performed at the same timing as the auto-gain control, which will be described later, since disturbance is input to the focus loop.
Adjusting procedure
1) The microcomputer issues the command to introduce disturbance to the focus loop (inside the servo LSI).
2) The waver of the 3T component of the RF signal is detected in the LSI.
3) The relation between the 3T component above and the disturbance is processed inside the LSI to detect the volume and direction of the focus offset.
4) The microcomputer issues a command and reads out the detected results from the servo LSI.
5) The microcomputer calculates the necessary correction and substitutes the result to the bias adjustment term inside the servo LSI.
Additionally, in this adjusting, a series of steps are repeated for better adjustment accuracy, the same as in the auto-gain control.

1.3.4 Focus and tracking AGC

This adjustment is to automatically adjust the focus and tracking servo loop gains.

Adjusting procedure

1) Introduce disturbance to the servo loop.

2) The error signals (FE and TE) when disturbance is introduced are extracted through the band pass filter, to obtain the G1 and G2 signals.

3) The microcomputer reads the G1 and G2 signals through the servo LSI.

4) The microcomputer calculates the necessary correction and performs the loop gain adjustment inside the servo LSI.

For increased adjustment accuracy, the same adjustment process is repeated a few times.

1.3.5 RF level auto-adjustment (RFAGC)

This adjustment is to adjust the dispersion of the RF level (RFO), which may be caused by mechanism or disc-related factors, to a steady value for reliable signal transmission. The adjustment is performed by changing the amp gain between RFO and RFAGC.

Adjusting procedure

1) The microcomputer issues a command and reads out the output from the RF level detection circuit inside the servo LSI.

2) From the read values, the microcomputer calculates the amp gain to change the RFAGC level to the target.

3) The microcomputer sends a command to the servo LSI to adjust the amp gain to the level calculated in 2).

This adjustment is performed

1) when only the focus close operation is completed during the setup mode, and

2) immediately before the setup is completed (or when the play mode is about to start).

1.3.6 Adjustment of gains in preamplifier stage

In this adjustment, when reflected beams from the disc surface are extremely weak, such as when the lens is dirty, or a CD-RW is played, gains in the whole RFAMP block (FE, TE, and RF amplifiers) are increased by + 6 dB or + 12 dB, depending on the situation.

Adjusting procedure

When the system determines that the reflected beams from the disc surface are extremely weak during the setup mode, the whole RFAMP gains will be increased by + 6 dB or + 12 dB.

1.3.7 Initial values in adjustment

All automatic adjustments immediately after inserting a disc are performed based on the initial values. Automatic adjustments by source change or ACC ON are basically performed using the previous adjustment values as the initial values.

1.3.8 Coefficient display of adjustment results

For some of the adjustments (FE and RF offset, FZD cancel, F and T gains, and RFAGC), the adjustment results can be displayed and confirmed in the test mode.

The coefficient display in each auto adjustment is as follows:

1) FE and RF offset

Reference value = 32 (coefficient of 32 indicates that no adjustment is required)

The value is displayed in the unit of approximately 32mV.

Ex. When the FE offset coefficient is 35,

35 - 32 = 3 x 32 mV = 96 mV

The correction is about +96 mV, which means the FE offset before adjustment is - 96 mV.

2) F and T gain adjustment

Reference value for focus and tracking = 20

The displayed coefficient / the reference value indicates the adjusted gain.

Ex. When the AGC coefficient is 40,

adjustment of 40 / 20 = 2 times (+ 6 dB) has been performed.

(It means that the original loop gain was half the target, and the whole gain was doubled to obtain the target value.)

3) RF level adjustment (RFAGC)

Reference value = 8

The coefficient of 9 to 15 indicates to increase the RF level

(for more gains).

The coefficient of 7 to 10 indicates to decrease the RF level

(for less gains).

When the coefficient changes by 1, the gain changes by 0.7 to 1 dB.

When the coefficient is 15, the gain is the maximum at TYP + 7.9 dB.

When the coefficient is 0, the gain is the minimum at TYP - 4.6 dB.

1.4 POWER SUPPLY AND LOADING BLOCK

For the power supply for this system, the VD (7.5 ± 0.5 V) and the VDD (5.0 ± 0.25 V), which are supplied from the motherboard, are used. The three power supplies, the VD mentioned above (for the drive system), the V3R3D obtained from the VD via the 3.3 V regulator (for the control system: 3.3 V) and the VDD (for the microcomputer: 5 V), are used in this system.

The microcomputer controls ON/OFF with "CONT", except for Load/Eject of the CD driver, and ON/OFF of 3.3 V with "CD3VON". For ON/OFF of the Loading drive, no particular control terminals are available, but the input signal "LOEJ" assumes an equivalent role. Also, the LCO output switches LOADING MODE and CARRIAGE MODE with "CLCONT".

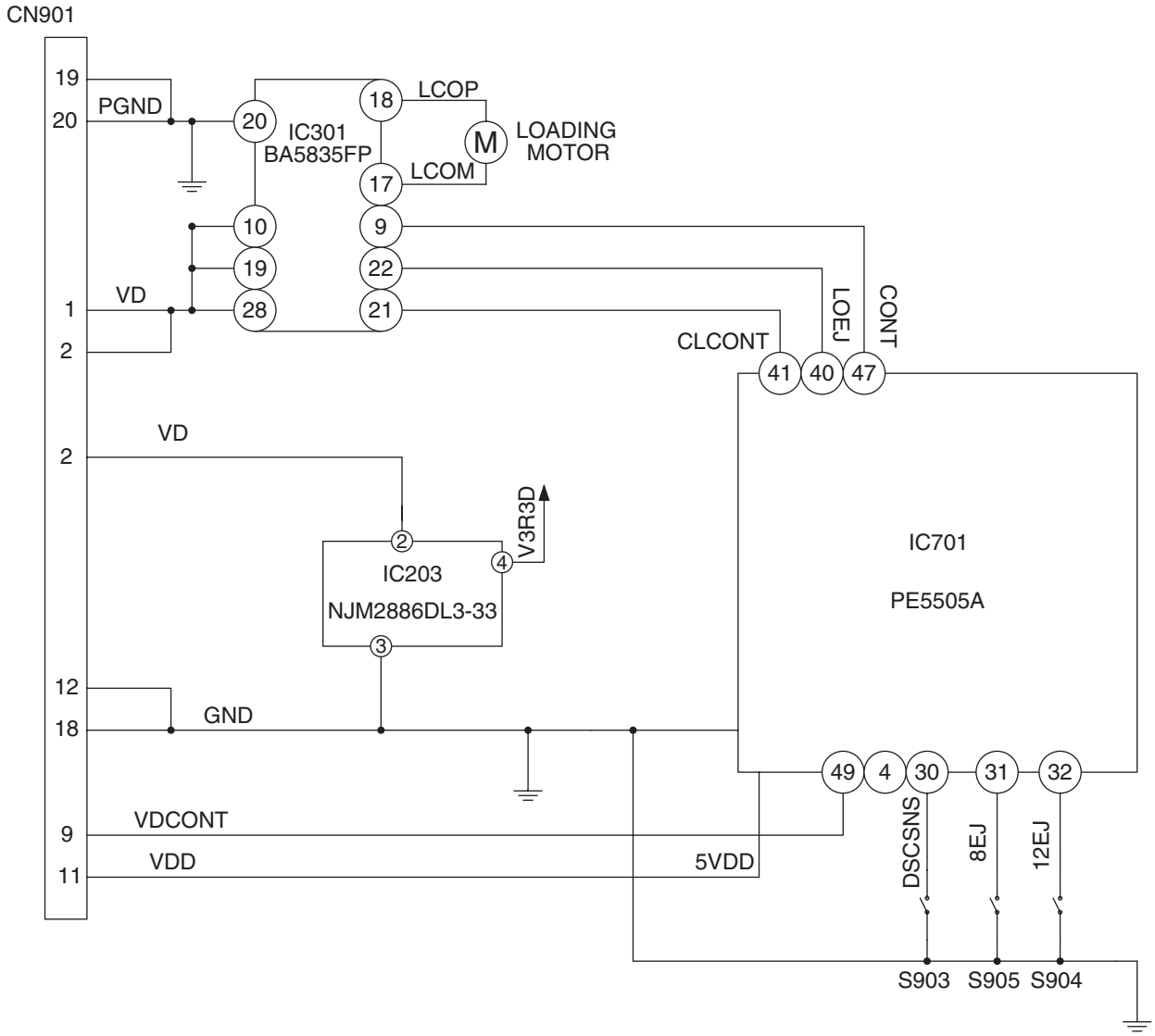


Fig.1.4.1 Power supply/loading system circuit block

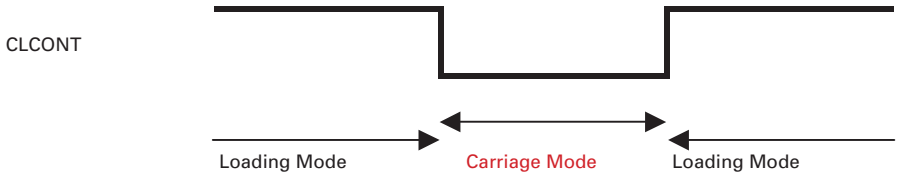


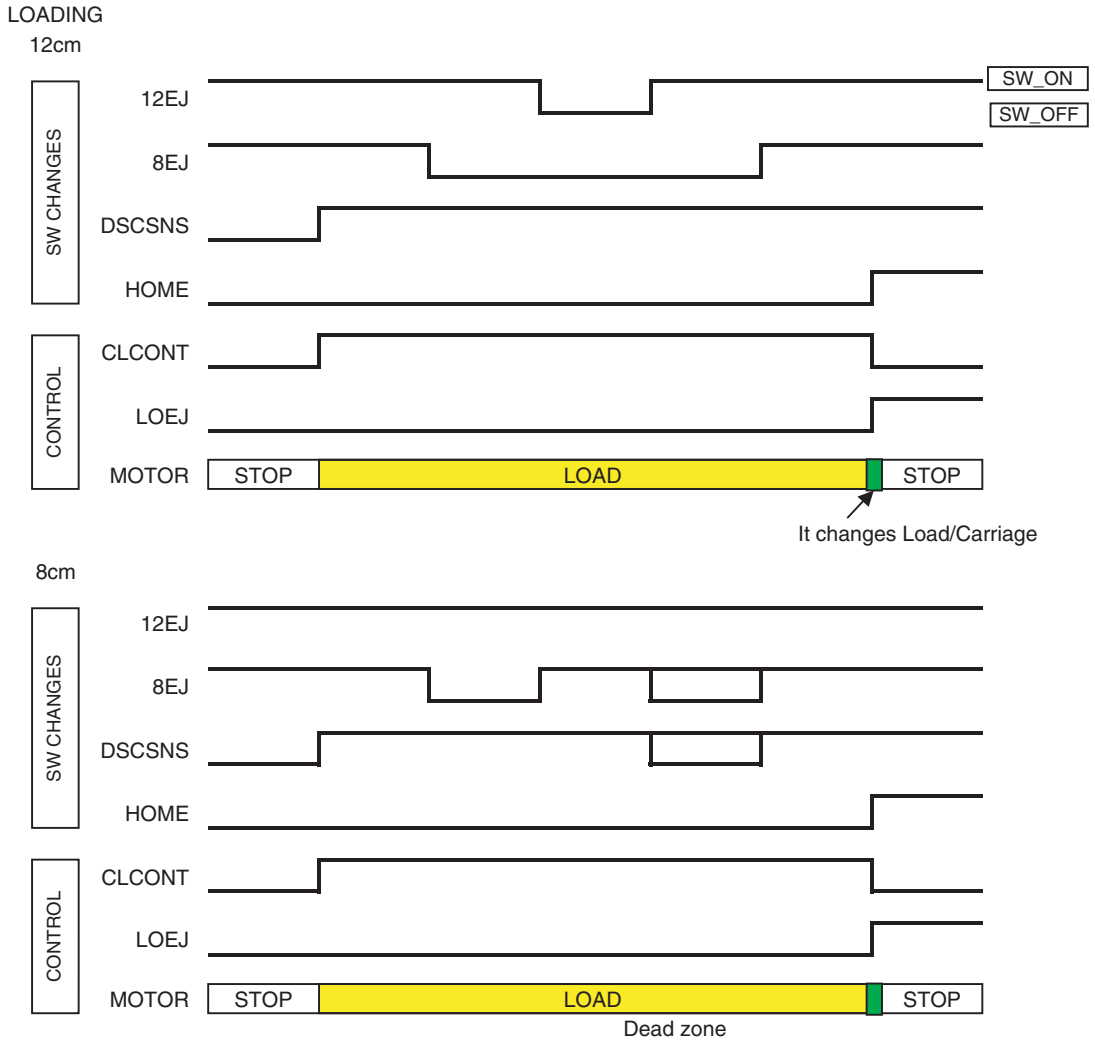
Fig.1.4.2 Loading/carriage mode shift

The load/eject operation is controlled with the status changes of the HOME switch (also used for clamp detection) on the mechanism unit and the three switches on the control unit. The ON/OFF statuses of these switches are respectively detected at the input port of the microcomputer.

Using the detection results in the microcomputer, each status (A to E) is determined. The disc size detection (8 or 12 cm) is also performed through this status change. Each status is shown in Fig.1.4.3 and the status change in Fig.1.4.4.

	Status	A	B	C	D	E
DSCSNS	SW1(S903)	OFF	ON	ON	ON	ON
8SW	SW2(S905)	ON	ON	OFF	OFF	ON
12SW	SW3(S904)	ON	ON	ON	OFF	ON
HOME	SW4(S901)	OFF	OFF	OFF	OFF	ON
	Mechanism state	With no disc				Clamp state

Fig.1.4.3 DSCSNS status



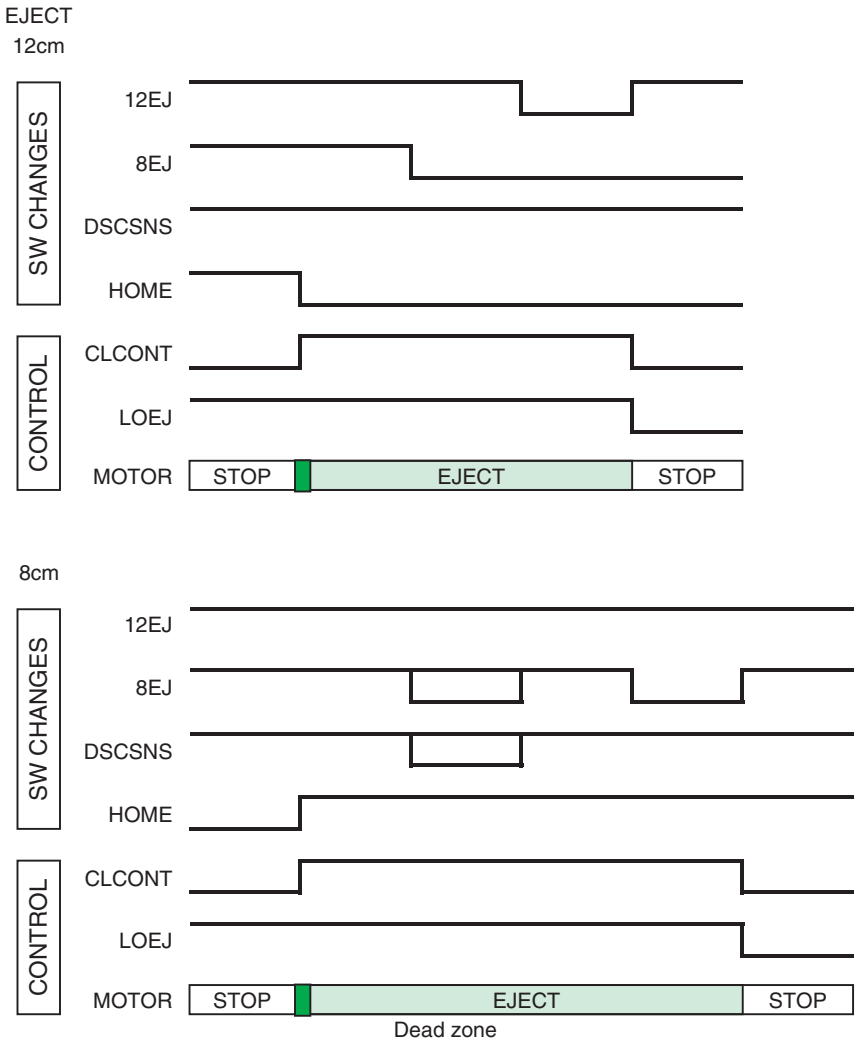
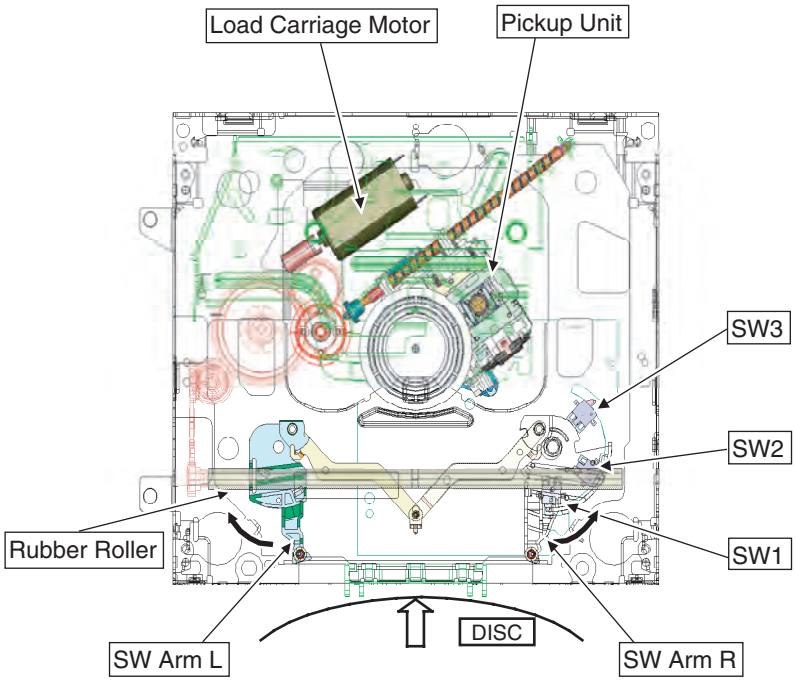


Fig.1.4.4 Status change in LOAD and EJECT modes

2. MECHANISM DESCRIPTIONS

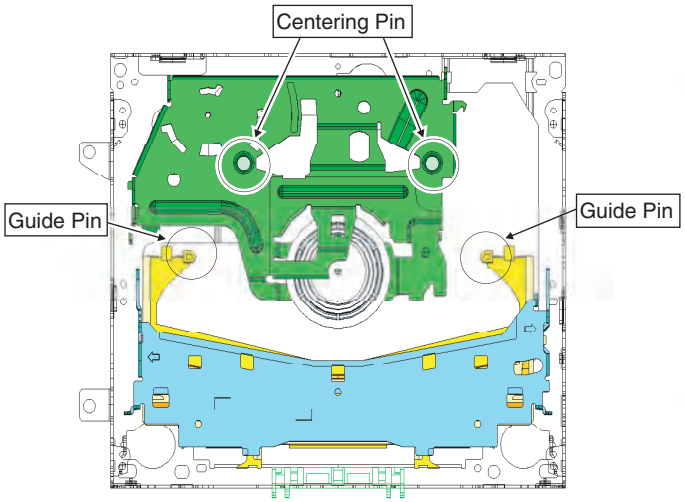
● Loading actions

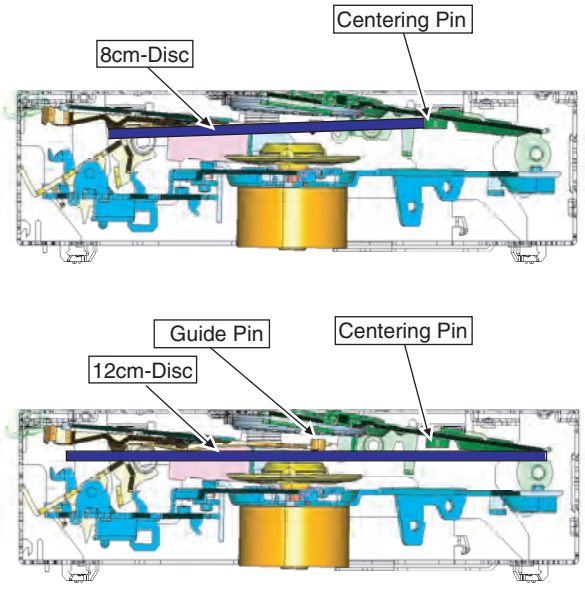
1. When a disc is inserted, SW Arm L and R rotate and SW1 is switched from ON to OFF.
   When SW1 is switched from ON to OFF, the Load Carriage Motor is started and the rubber roller rotates.
2. If the disc is a 12cm-disc, SW3 is turned ON with SW Arm, and the microcomputer determines that the disc is a 12cm-disc.
3. In case of an 8cm-disc, SW3 is not turned ON, a clamp action is triggered, and the microcomputer determines that the disc is an 8cm-disc.
   (The left and right of SW Arm are coupled, and when only one side is pushed, the coupled joint will lock, and the arms will not open more than a certain width (SW3 will not be turned ON).)



● Disc centering mechanism

1. 8cm-disc is centered by the Guide Pins and the Centering Pins.
2. 12cm-disc passes under the Guide Pins and the Centering Pins, and centered in the back position of the mechanism.





● Clamp actions mechanism

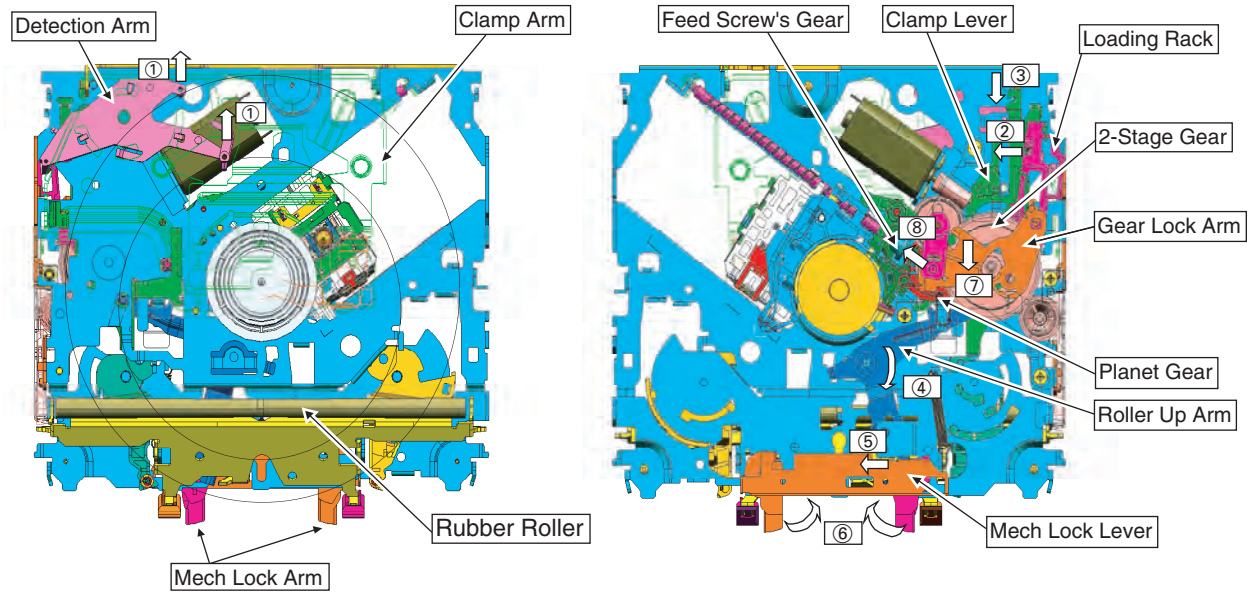
1. With an 8 or 12cm-disc centered on the spindle, the Detection Arm is moved.
2. The movement of the Detection Arm engages the Loading Rack with the 2-Stage Gear.
3. The Clamp Lever slides and lowers the Clamp Arm (the disc is clamped).

At the same time, the Roller Up Arm is rotated, and the Rubber Roller is separated from the disc.

Also the arm slides the Mechanical Lock Lever, turns the Mechanical Lock Arm, and releases the mechanical lock, completing the clamp operation.

4. When the clamp action is completed, the Clamp Lever rotates the Gear Lock Arm.

When the arm is rotated, the Planet Gear is separated from the 2-Stage Gear and engaged with the gear of the pickup feed screw, and the carriage operation will start



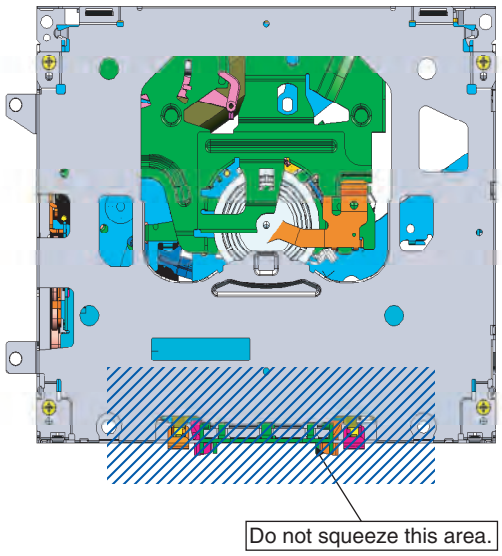
● Eject actions

1. When the Load Carriage Motor is rotated backward, and the pickup is fed to the inner periphery passing the home SW ON point, the eject action will start in the reverse order of the procedure mentioned earlier.
2. For a 12cm-disc, Eject is completed when SW3 is switched OFF, ON, and OFF again.
3. For an 8cm-disc, Eject is completed when SW2 is switched OFF, ON, and OFF again.

3. DISASSEMBLY

● How to hold the Mechanism Unit

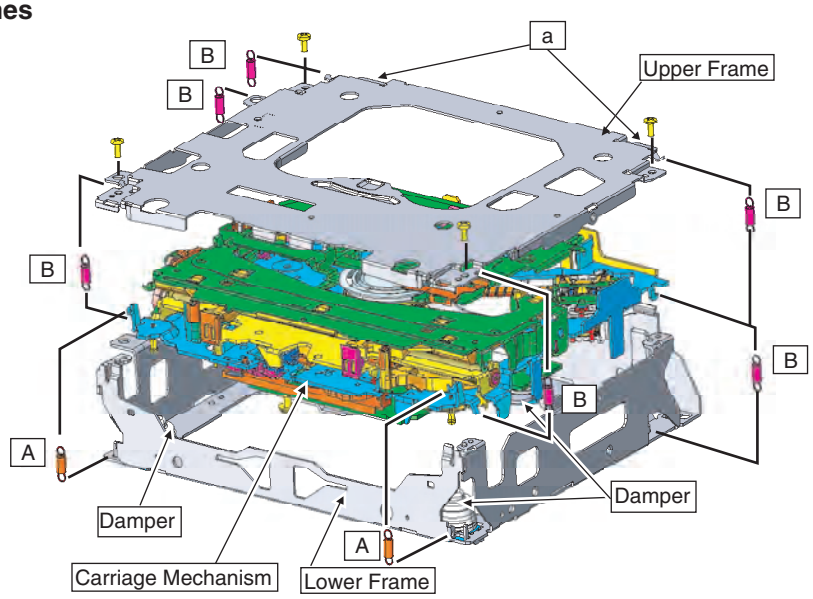
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

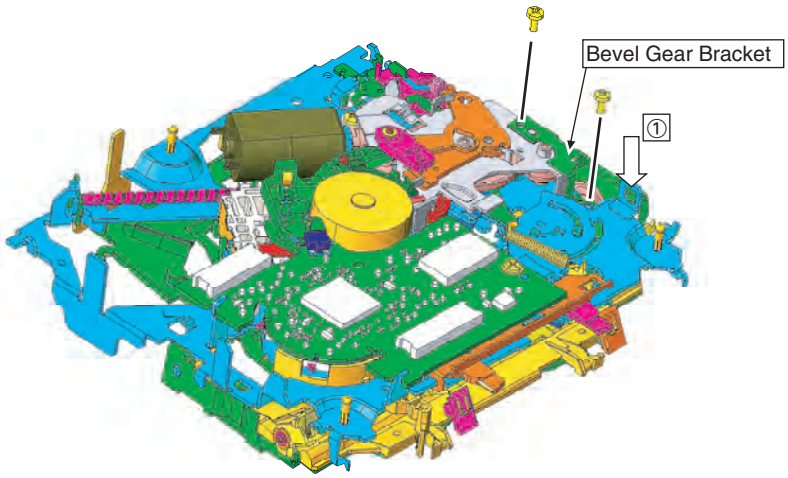
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.

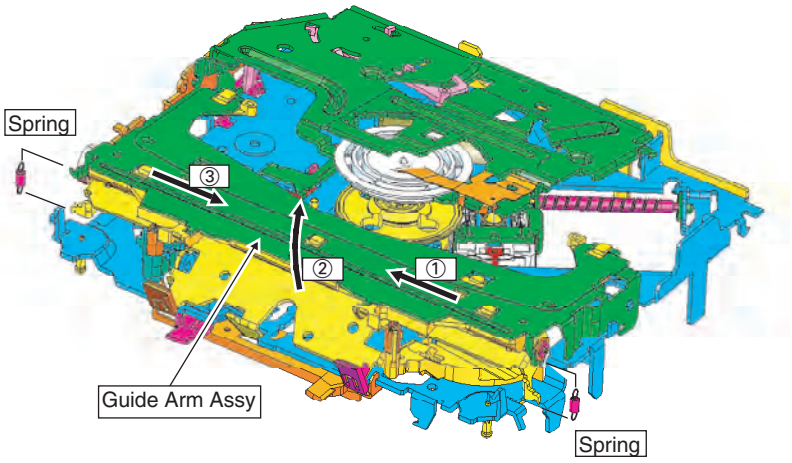


● Removing the Guide Arm Assy

1. Remove the Upper and Lower Frames and set the mechanism to the eject mode.
2. Remove the two Screws and Bevel Gear Bracket. (Note that the gears will come off.)
3. Remove the two Springs from the left and right sides.
4. Slide the Guide Arm Assy to the left, and turn it upward.
5. When it is turned about 45 degrees, slide it to the right and remove.

Caution: When assembling, assemble with the Bevel Gear Bracket moved to the direction of the arrow (①).

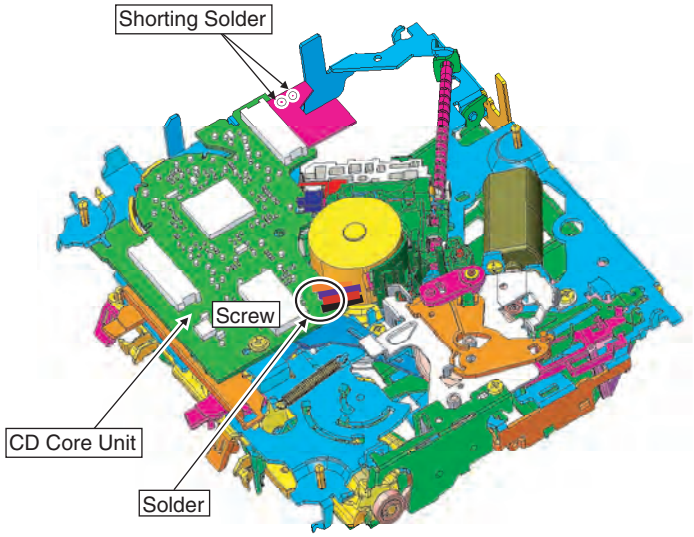




● How to remove the CD Core Unit

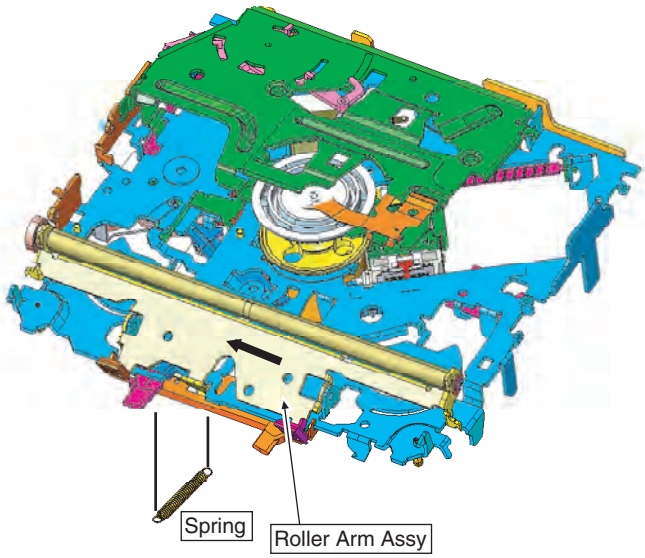
1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

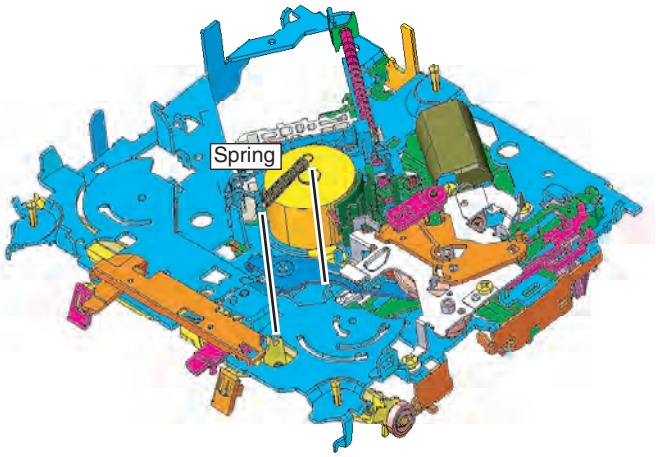
Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.



● How to remove the Roller Arm Assy

1. Remove the Guide Arm Assy.
2. Remove the CD Core Unit. (If the Spring can be removed, the unit need not be removed, depending on the type of CD Core Unit.)
3. Remove the Spring.
4. Slide the Roller Arm Assy to the left.



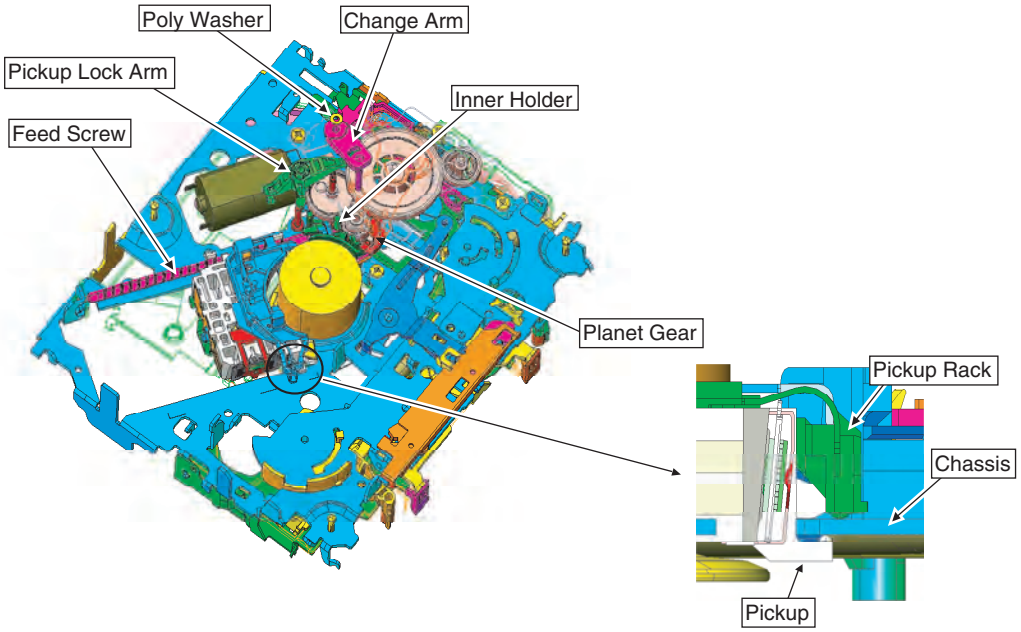


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

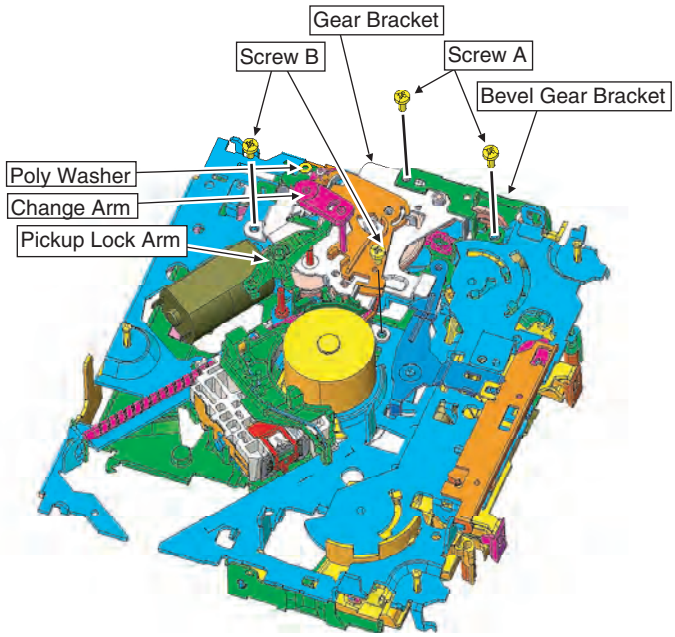
Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.

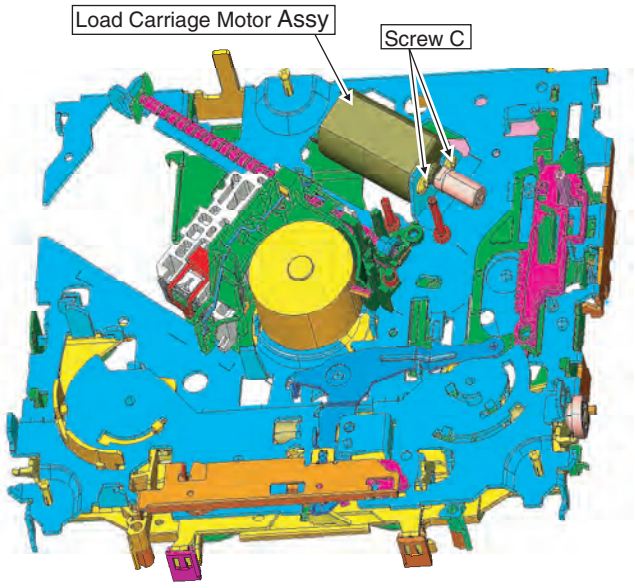


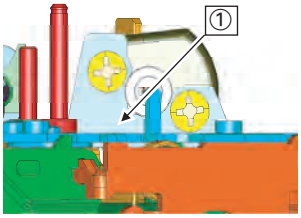
● How to remove the Load Carriage Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Release the leads (orange and purple) of Load Carriage Motor Assy from the CD Core Unit and remove the holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. Remove the two Screws (A) and the Bevel Gear Bracket (Note that the gears will come off).
5. Remove the two Screws (B) and the Gear Bracket (remove the CD Core Unit, if necessary), and remove all the gears.
6. Remove the two Screws (C) and the Load Carriage Motor Assy.

Caution: When assembling the Load Carriage Motor Assy, move it to the direction shown in the illustration (①).
When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



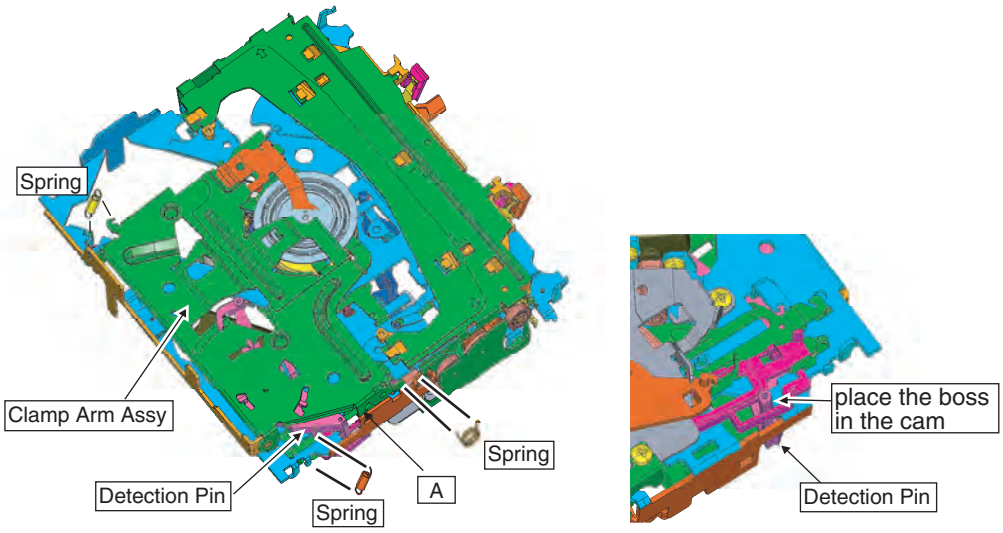




● How to remove the Clamp Arm Assy

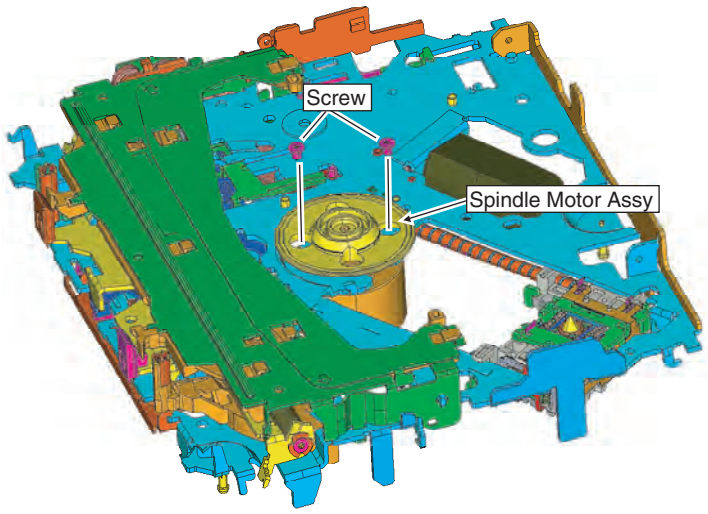
1. Make the system in the carriage mechanism mode, and set the mechanism to the eject mode.
2. Remove the three Springs.
3. While pressing the position A, turn the Clamp Arm Assy upward, slide it to the left, and remove.

Caution: When assembling, place the boss of the Detection Pin in the cam unit of the Loading Rack.



● How to remove the Spindle Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Set the mechanism to the eject mode and remove the Clamp Arm Assy.
4. Set the mechanism to the clamped and move the Pickup to circumference.
5. Remove the two Screws, and remove the Spindle Motor Assy.



Pioneer sound.vision.soul

Service Manual

ORDER NO.
CRT3583

CD MECHANISM MODULE(S10.5COMP1)

CX-3164

This service manual describes the operation of the CD mechanism module incorporated in models listed in the table below.
When performing repairs use this manual together with the specific manual for model under repair.

Model	Service Manual	CD Mechanism Module
DEH-2800MP/XN/UC DEH-2850MP/XN/ES	CRT3554	CXK5752
DEH-2800MP/XN/EW DEH-2800MPB/XN/EW DEH-2820MP/XN/EW DEH-281MP/XN/EW	CRT3555	CXK5752
DEH-3850MP/XU/ES DEH-3850MPH/XU/GS DEH-3850MP/XU/CN	CRT3556	CXK5750
DEH-P3800MP/XU/UC	CRT3557	CXK5750
DEH-P4800MP/XU/EW	CRT3558	CXK5750
DEH-P580MP/XN/UC DEH-P5800MP/XN/UC	CRT3563	CXK5752
DEH-P6800MP/XN/EW	CRT3564	CXK5752
DEH-P5850MP/XN/ES DEH-P5850MPH/XN/GS	CRT3565	CXK5752
DEH-P480MP/XU/UC DEH-P4800MP/XU/UC	CRT3566	CXK5750
DEH-P4850MP/XU/ES DEH-P4850MPH/XU/GS DEH-P4850MP/XU/CN	CRT3567	CXK5750
DEH-P680MP/XN/UC DEH-P6800MP/XN/UC DEH-P6850MP/XN/ES	CRT3569	CXK5752

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PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
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CONTENTS

1. CIRCUIT DESCRIPTIONS

UPD63763CGJ, multifunctional LSI used in this device, has built-in CD-ROM decoder and MP3/WMA decoder, as shown in Fig.1.0.1, as well as the conventional CD block, allowing to play CD-ROMs, in which MP3/WMA files are recorded, while the recent mainstay of the CD LSI is the LSI integrating the core DSP with DAC or RF amplifier, which are generally used as peripheral circuits.

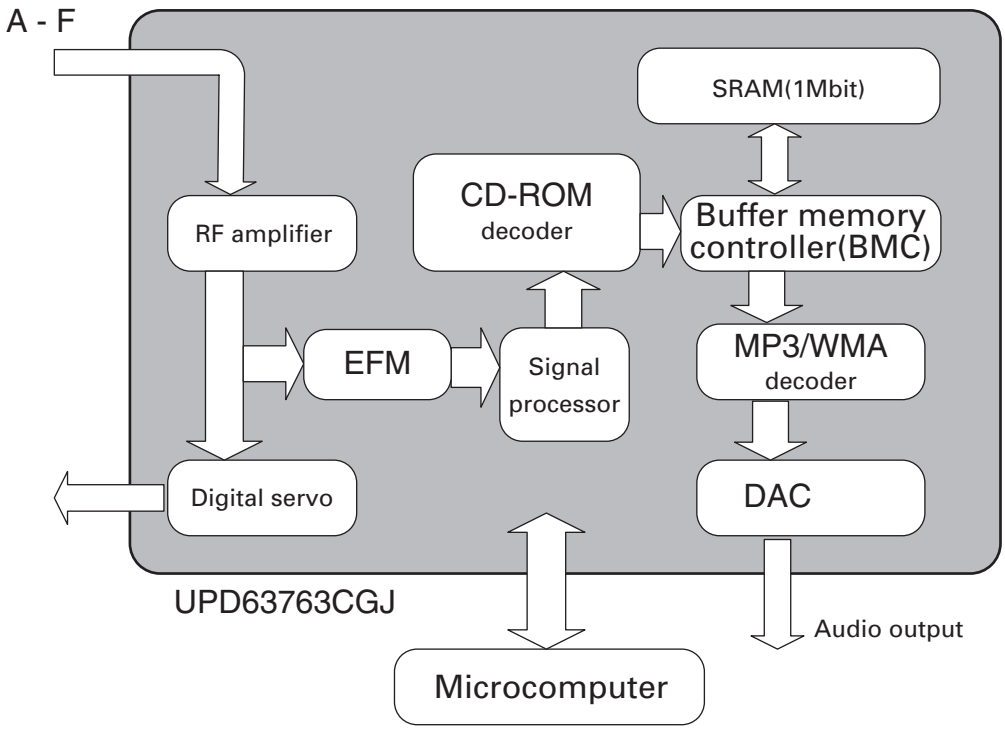


Fig.1.0.1 Block diagram of CD LSI UPD63763CGJ

1.1 PREAMPLIFIER BLOCK (UPD63763CGJ: IC201)

In the preamplifier block, the pickup output signals are processed to generate signals that are used in the subsequent blocks: servo, demodulator, and control blocks. Signals from the pickup are I/V converted in the pickup with the preamplifier with built-in photo detectors, and after added with the RF amplifier, they are used to produce such signals as RF, FE, TE, and TE zero-cross signals. The preamplifier block is built in CD LSI UPD63763CGJ (IC201), whose parts are described individually below. Incidentally, as this LSI employs a single power supply (+ 3.3 V) specification, the reference voltages of this LSI and the pickup are the REFO (1.65 V) for both. The REFO is an output obtained from REFOUT in the LSI via the buffer amplifier, and is output from the pin 133 of this LSI. All measurements will be performed with this REFO as the reference.

Caution: Be careful not to short-circuit the REFO and GND when measuring.

1.1.1 APC (Automatic Power Control) circuit

Since laser diodes have extremely negative temperature characteristics in optical output when driven in constant current, it is necessary to control the current with the monitor diodes in order to keep the output constant. This is the feature of the APC circuit. The LD current is obtained by measuring the voltage between LD1 and V3R3D(+ 3.3 V), and divide the value by 7.5 (ohms), which becomes about 30 mA.

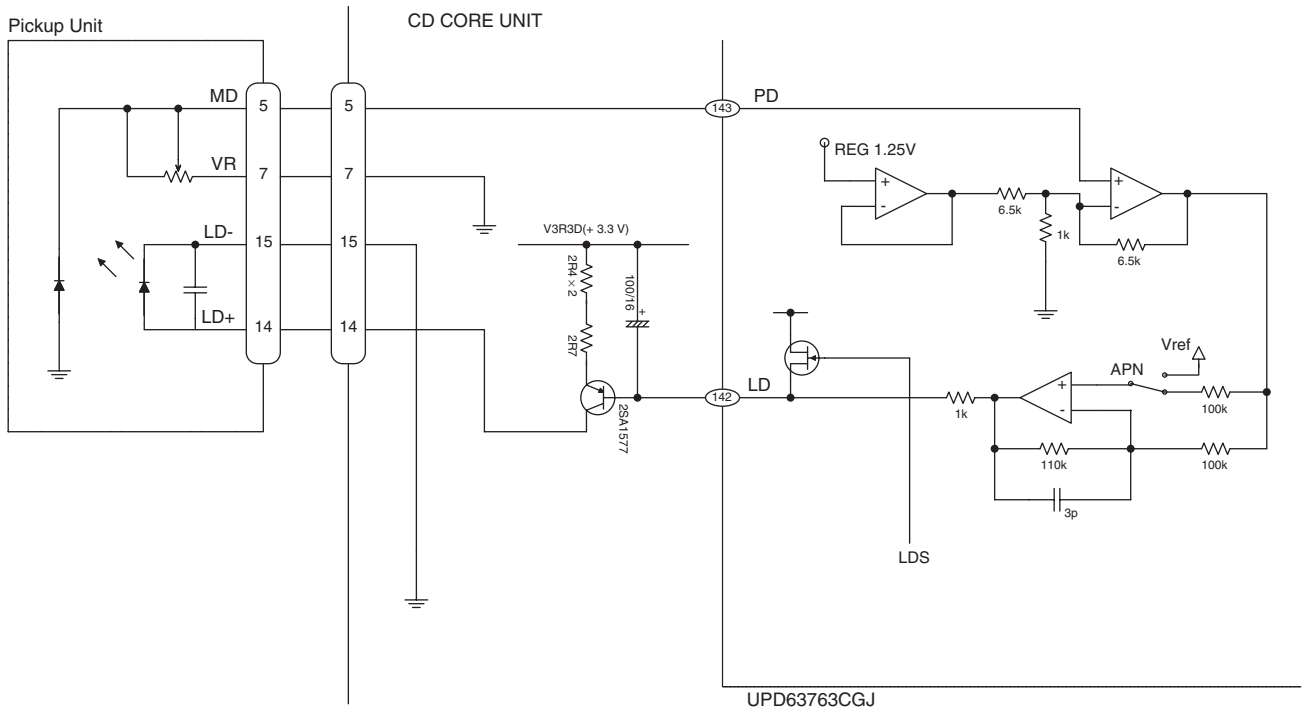


Fig.1.1.1 APC

1.1.2 RF and RFAGC amplifiers

The output from the photo-detector (A + C) and (B + D) is provided from the RFO terminal as the RF signal (which can be used for eye-pattern check), after it is added, amplified, and equalized inside this LSI. The low frequency component of the voltage RFO is calculated as below.

RFO = (A + B + C + D) x 2

The RFO is used for the FOK generation circuit and RF offset adjustment circuit.

The RFO signal, output from the pin 119, is A/C-coupled externally, input to the pin 118, and amplified in the RFAGC amplifier to obtain the RFAGC signal.

Also, this LSI is equipped with the RFAGC auto-adjustment function, explained below, which switches feedback gains of the RFAGC amplifier so that the RFO output will be 1.5 V.

This RFO signal is also used for the EFM, DFCT, MIRR, and RFAGC auto-adjustment circuits.

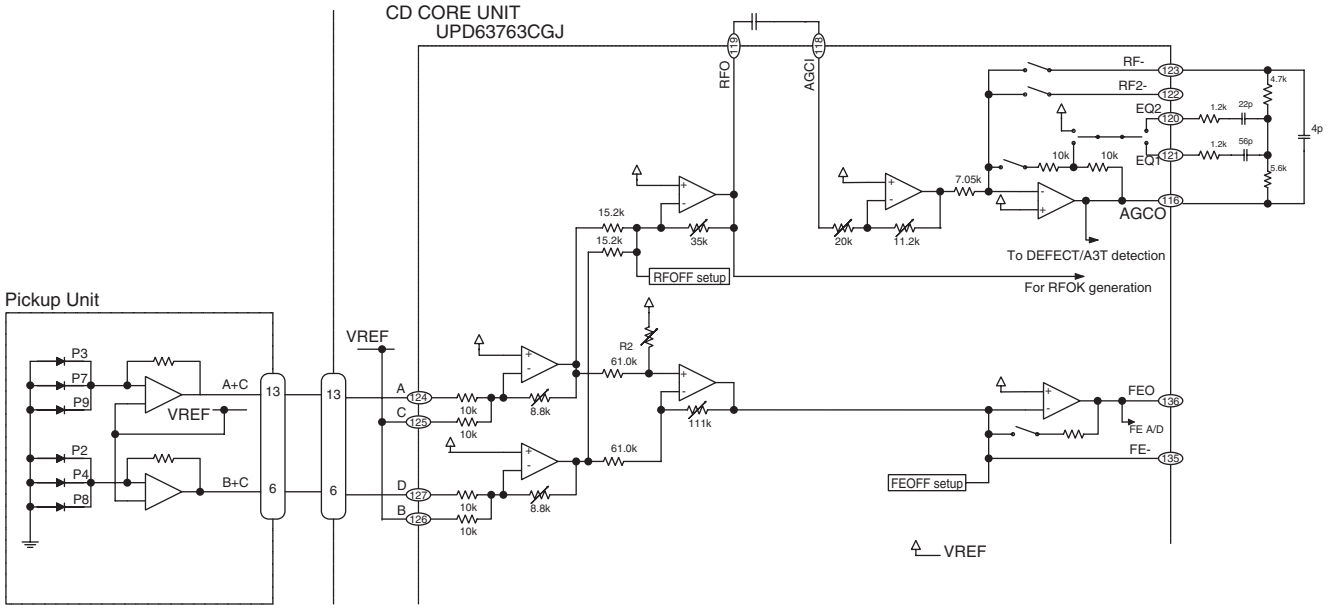


Fig.1.1.2 RF/AGC/FE

1.1.3 Focus error amplifier

The photo-detector outputs (A + C) and (B + D) are passed through the differential amplifier and the error amplifier, and (A + C - B - D) is provided from the pin 136 as the FE signal. The low frequency component of the voltage FE is calculated as below.

FE = (A + C - B - D) x 8.8k / 10k x 111k / 61k x 160k / 72k

= (A + C - B - D) x 3.5

For the FE outputs, an S-shaped curve of 1.5 Vp-p is obtained with the REFO as the reference. The cutoff frequency for the subsequent stage amplifiers is 14.6 kHz.

1.1.4 RFOK circuit

This circuit generates the RFOK signal, which indicates the timing to close the focus loop and focus-close status during the play mode, from the pin 55. As for the signal, "H" is output in closing the focus loop and during the play mode.

Additionally, the RFOK becomes "H" even in a non-pit area, since the DC level of the RFO signal is peak-held in the subsequent digital block and compared at a certain threshold level to generate the RFOK signal. Therefore, the focus is closed even on a mirror-surface area of a disc. This signal is also supplied to the microcomputer via the low-pass filer as the FOK signal, which is used for protection and gain switching of the RF amplifier.

1.1.5 Tracking error amplifier

The photo-detector outputs E and F are passed through the differential amplifier and the error amplifier to obtain (E - F), and then provided from the pin 139 as the TE signal. The low frequency component of the voltage TE is calculated as below.

TEO = (E - F) x 63k / 112k x 160k / 160k x 181k / 45.4k x 160k / 80k

= (E - F) x 4.48

For the TE output, TE waveform of about 1.3 Vp-p with the REFO as the reference. The cutoff frequency in the subsequent is 21.1 kHz.

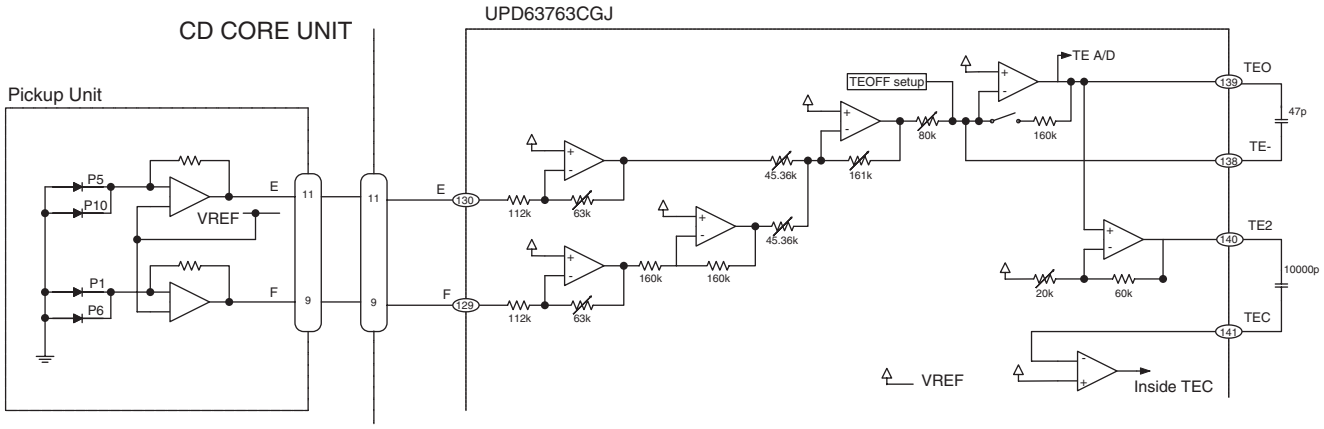


Fig.1.1.3 TE

1.1.6 Tracking zero-cross amplifier

The tracking zero-cross signal (hereinafter referred to as TEC signal) is obtained by amplifying the TE signal by fourfold, and used to detect the tracking-error zero-cross point. As the purpose of detecting the zero-cross point, the following two points can be named:

1. To use for track-counting in the carriage move and track jump modes
2. To use for detecting the direction in which the lens moves in tracking close. (Used in the tracking brake circuit to be explained later.)

The frequency range of the TEC signal is from 300 Hz to 20 kHz, and

TEC voltage = TE level x 4

The TEC level can be calculated at 4.62 V, which, at this level, exceeds the D range of the operational amplifier, and clips the signal, but, because the CD LSI only uses the signal at the zero-cross point, it poses no particular problem.

1.1.7 EFM circuit

The EFM circuit converts the RF signal into digital signals of 0 and 1. The AGCO signal output from the pin 116 is A/C-coupled externally, input to the pin 114, and supplied to the EFM circuit.

Missing RF signal due to scratches and stains on the disc, and asymmetry of the upper and lower parts of the RF, caused by variation in disc production, cannot be entirely eliminated in AC coupling process, the reference voltage ASY of the EFM comparator is controlled, using the probability that 0 and 1 occur at 50%. Thus, the comparator level will always stay around the center of the RFO signal. This reference voltage ASY is generated by passing the EFM comparator output through the low-pass filter. The EFM signal is output from the pin 111.

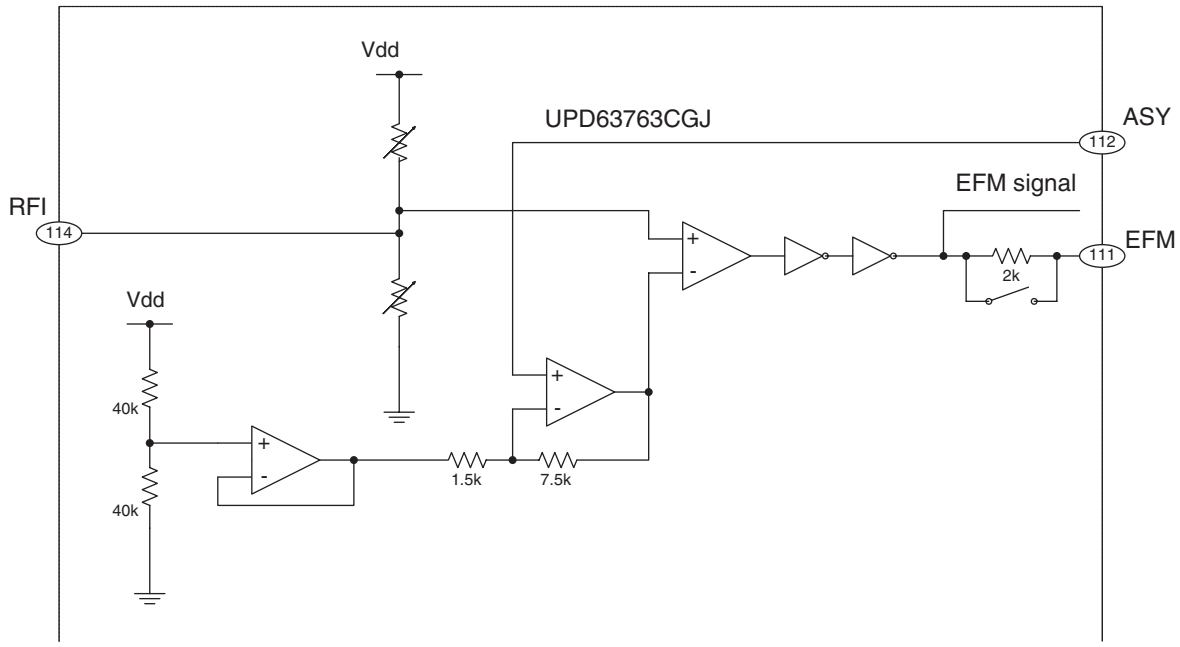


Fig.1.1.4 EFM

1.2 SERVO BLOCK (UPD63763CGJ: IC201)

The servo block performs servo control such as error signal equalizing, in-focus, track jump and carriage move. The DSP block is the signal-processing unit, where data decoding, error correction, and compensation are performed. The FE and TE signals, generated in the preamplifier stage, are A/D-converted, and output drive signals for the focus, tracking, and carriage systems via the servo block. Also, the EFM signal is decoded in the signal-processing unit, and ends up in outputting D/A-converted audio signals through the D/A converter. Furthermore, in this decoding process, the spindle servo error signal is generated, supplied to the spindle servo block, and used to output the spindle drive signal.

Each drive signal for focus, tracking, carriage, and spindle servos (FD, TD, SD, and MD) are output as PWM3 data, and then converted to analog data through the LPF. These drive signals, after changed to analog form, can be monitored with the FIN, TIN, CIN, and SIN signals, respectively. Subsequently, the signals are amplified and supplied to the actuator and motor for each signal.

1.2.1 Focus servo system

The main equalizer of the focus servo consists of the digital equalizer block. The figure 1.2.1 shows the block diagram of the focus servo system.

In the focus servo system, it is necessary to move the lens within the in-focus range in order to close the focus loop. For that purpose, the in-focus point is looked for by moving the lens up and down with the focus search voltage of triangular signal. During this time, the rotation of the spindle motor is retained at a certain set speed by kicking the spindle motor.

The servo LSI monitors the FE and RFOK signals and automatically performs the focus-close operations at an appropriate timing. The focus-close operation is performed when the following three conditions are satisfied at the same time:

1) The lens moves toward the disc surface.
2) RFOK = "H"
3) The FE signal is zero-crossed.

Consequently, the FE converges to "0" (= REFO).

When the above-mentioned conditions are met and the focus loop is closed, the FSS bit is shifted from "H" to "L," and then, in 10 ms, the microcomputer starts monitoring the RFOK signal obtained through the low-pass filter.

If the RFOK signal is determined to be "L," the microcomputer takes several actions including protection.

Fig.1.2.2 shows a series of actions concerning the focus close operations. (It shows a case where the focus loop cannot be closed.)

With the focus mode selector displaying 01 in the test mode, pressing the focus close button, allows to check the S-shaped curve, search voltage, and actual lens behavior.

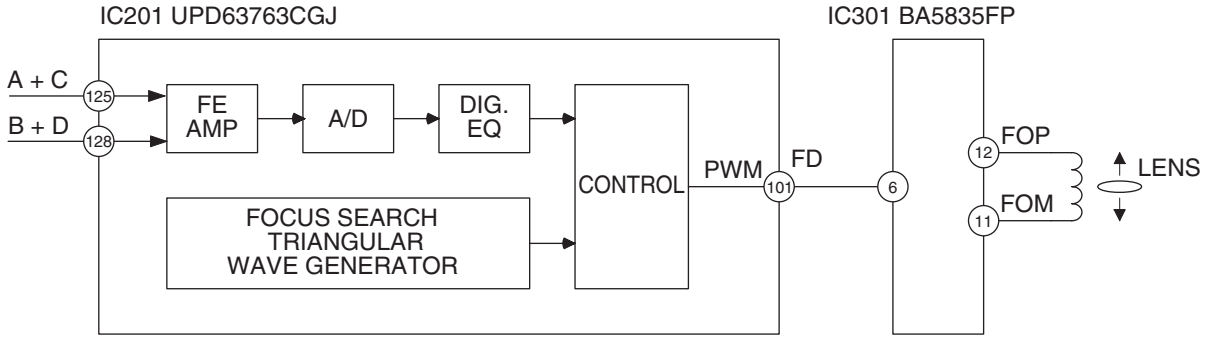


Fig.1.2.1 Block diagram of the focus servo system

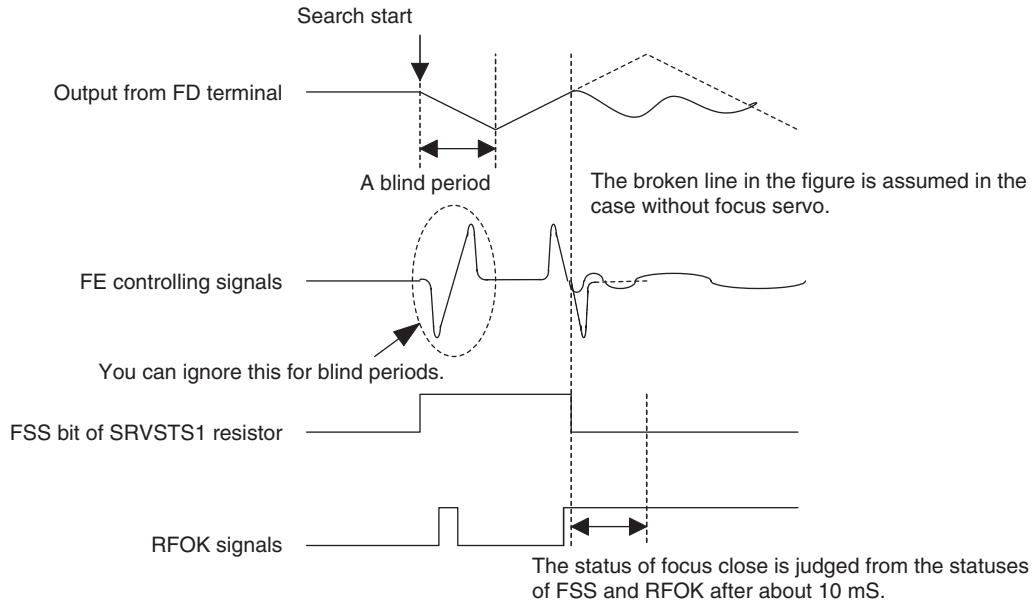


Fig.1.2.2 Timing chart for focus close operations

1.2.2 Tracking servo system

The main equalizer of the tracking servo consists of the digital equalizer block. The figure 1.2.3 shows the block diagram of the tracking servo system.

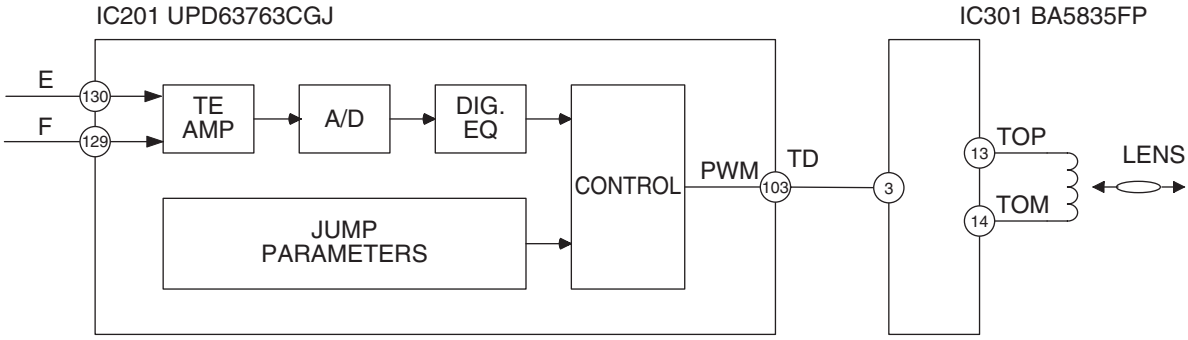


Fig.1.2.3 Block diagram of the tracking servo system

(a) The track jump operation is automatically performed by the auto-sequence function inside the LSI with a command from the microcomputer. For the track jumps used in the search mode, a single track jump and four to 100 multi-track jump are available in this system. In the test mode, out of these track jumps, 1, 32, and 32 * 3 track jumps, as well as carriage move can be performed and checked in mode selection. In a track jump, the microcomputer sets about half the number of the total tracks to jump (about five tracks for a 10-track jump), and the set number of tracks are counted using the TEC signal. By outputting the brake pulse for a certain period of time (set by the microcomputer) from the time the set number is counted, and stopping the lens, the tracking loop can be closed so that the normal play can be continued.

Also, in order to facilitate closing of the tracking loop in a track jump, the brake circuit is kept ON for 50 msec, after the brake pulse is stopped, for increasing the tracking servo gain. The FF/REW action in the normal operation mode is realized by performing single jumps consecutively. The speed is approximately 10 times faster than in the normal mode.

(b) Brake circuit

Since the servo loop is not closed very well in the setup mode and track jump mode, the brake circuit is used for stabilizing the servo-loop close operation. The brake circuit detects the direction in which the lens moves, and outputs only the drive signal for the direction opposite to the movement to slow down the lens, thereby stabilizing the tracking servo-loop close operation. Additionally, the off-track direction is determined from the TEC and MIRR signals, as well as their phase relation.

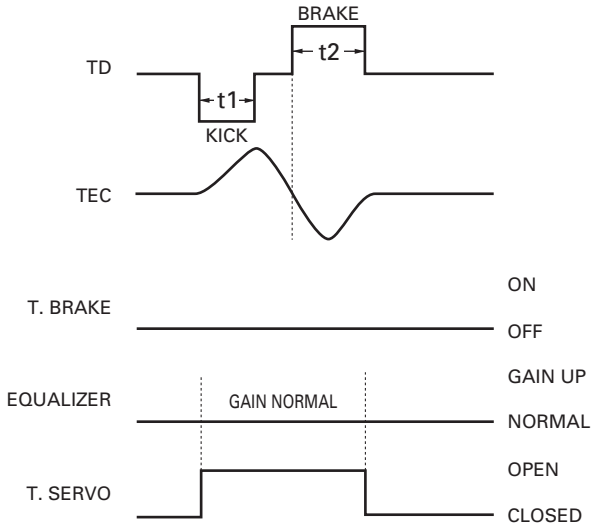


Fig.1.2.4 Single-track jump

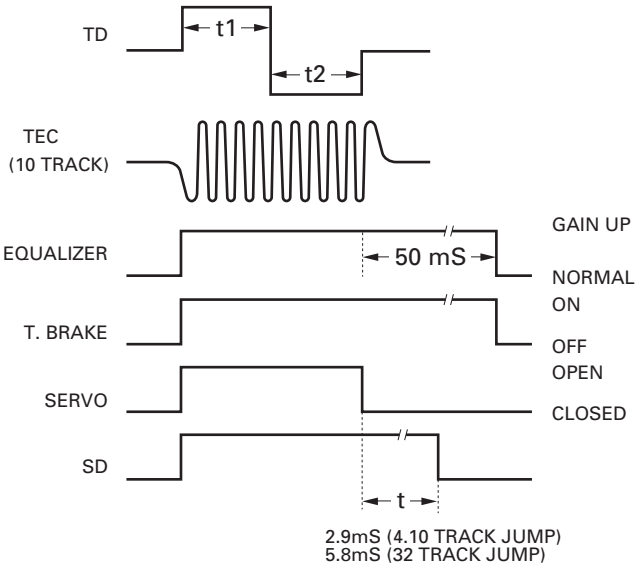
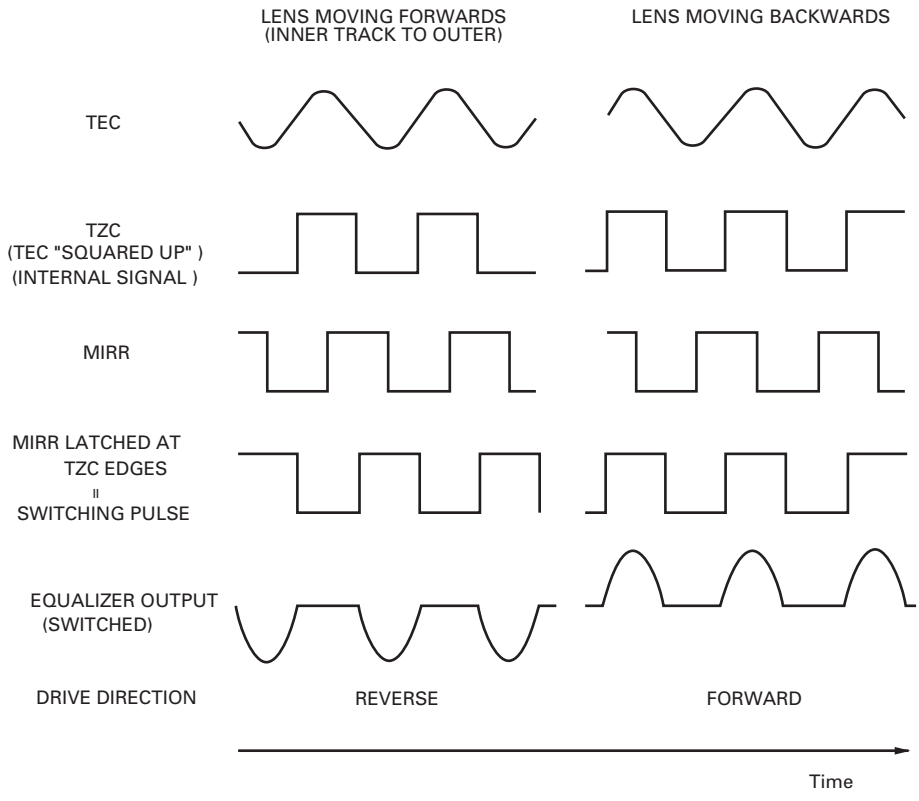


Fig.1.2.5 Multi-track jump



Note : Equalizer output assumed to hava same phase as TEC.

Fig.1.2.6 Track brake

1.2.3 Carriage servo system

The carriage servo system inputs the output of the low frequency component from the tracking equalizer (information on the lens position) to the carriage equalizer, and, after the gain is increased to a certain level, outputs the drive signal from the LSI. This signal is applied to the carriage motor via the driver IC.

Specifically, since it is necessary to move the whole pickup to the FORWARD direction when the lens offset reaches a certain level during the play mode, the equalizer gain is set to output higher voltage than the carriage motor starting voltage at this time. In actual operations, a certain threshold level is preset in the servo LSI for the equalizer output, and only when it exceeds the threshold level, the drive voltage will be output. This can reduce the power consumption. Also, before the whole pickup starts moving, the equalizer output voltage may exceed the threshold level a few times, due to such causes as eccentricity of discs. In this case, the output waveform of the drive voltage from the LSI assumes a pulse-like form.

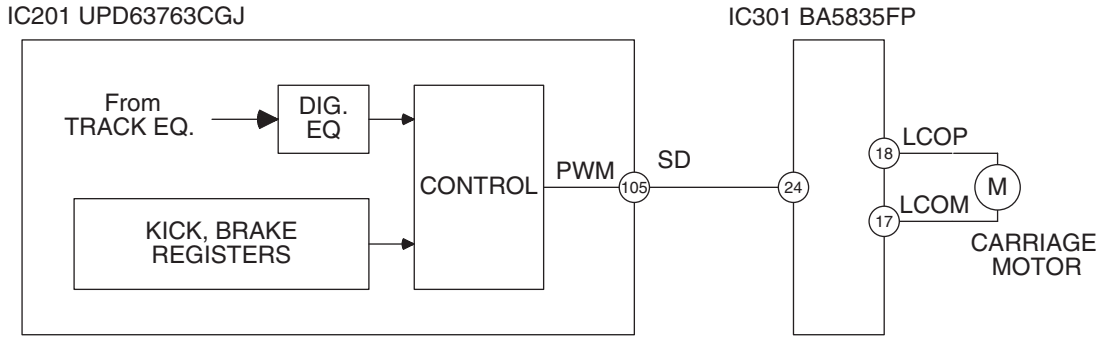


Fig.1.2.7 Block diagram for the carriage servo block

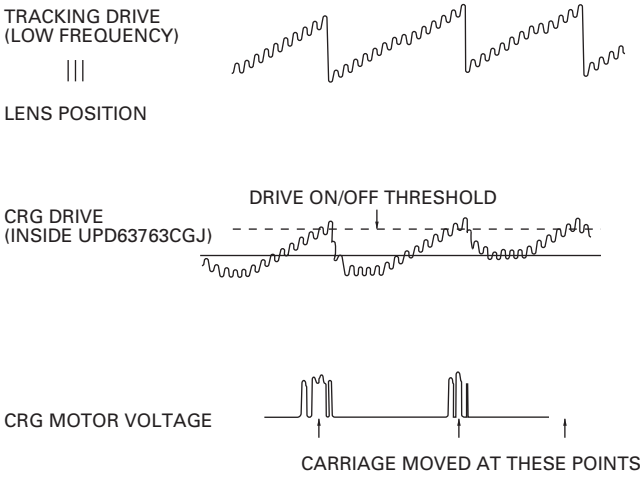


Fig.1.2.8 Waveforms of the carriage signal

1.2.4 Spindle servo system

In the spindle servo system, the following modes are available:

1) Kick

Used to accelerate the disc rotation in the setup mode.

2) Offset

a. Used in the setup mode after the kick mode, until the TBAL adjustment is completed.

b. Used during the play mode when the focus loop is unlocked, until it is locked again.

In both cases, the mode is used to keep the disc rotation approximately normal.

3) Applicable servo

CLV servo mode, used in the normal operation.

In the EFM demodulation block, by WFCK/16 sampling whether the frame sync signal and the internal frame counter output are synchronized, a signal is created to show if they are "in-sync" or "non-sync." The status is not recognized as asynchronous until the signal is "non-sync" for eight consecutive times; otherwise it is recognized as synchronous. In the applicable servo mode, the leading-in servo mode is automatically selected in the asynchronous status, and the normal servo mode in the synchronous status.

4) Brake

Used to stop the spindle motor.

In accordance with the microcomputer's command, the brake voltage is sent out from the servo LSI. At this time, the EFM waveform is monitored in the LSI, and when the longest EFM pattern exceeds a certain interval (or the rotation slows down enough), a flag is set inside the LSI, and the microcomputer switches off the brake voltage. If a flag is not set within a certain period, the microcomputer shifts the mode from the brake mode to the stop mode, and retains the mode for a certain period of time. If the mode switches to this stop mode in the eject operation, the disc will be ejected after the period of time mentioned above elapses.

5) Stop

Used when the power is turned on and during the eject operation. In the stop mode, the voltage in both ends of the spindle motor is 0 V.

6) Rough servo

Used in carriage feed (carriage move mode such as long search).

By obtaining the linear velocity from the EFM waveform, the "H" or "L" level is input to the spindle equalizer. In the test mode, this mode is also used for grating confirmation.

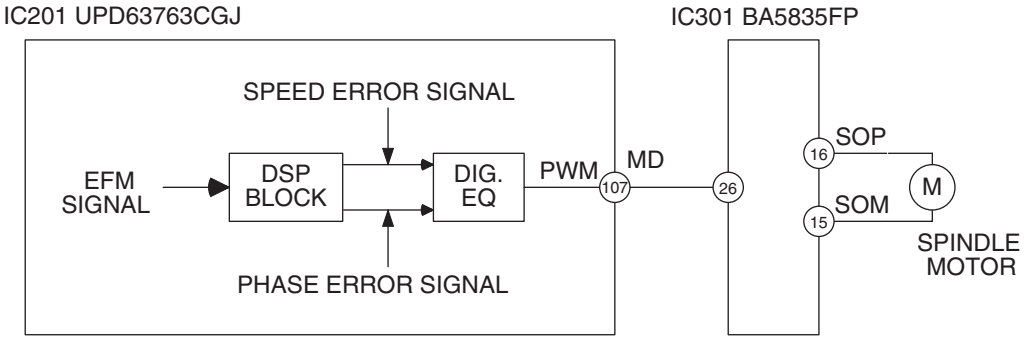


Fig.1.2.9 Block diagram of the spindle servo system

1.3 AUTOMATIC ADJUSTMENT FUNCTION

In this system, all the circuit adjustments are automated inside the CD LSI.
All adjustments are performed whenever a disc is inserted or the CD mode is selected by pressing the source key.
Details of each adjustment will be explained below.

1.3.1 TE, FE, and RF offset auto-adjustment

In this adjustment the TE, FE, and RF amplifier offsets of the preamplifier block in POWER ON are adjusted to the respective target values with the REFO as reference. (The target values for TE, FE, and RF offsets are 0 V, 0 V, and - 0.8 V, respectively.)
Adjusting procedure
1) The microcomputer reads respective offsets through the servo LSI, when they are in LDOFF status.
2) The microcomputer calculates the voltages for correction from the values read in 1), and substitutes the corrected values to prescribed places to adjust.

1.3.2 Tracking balance (T.BAL) auto-adjustment

This adjustment equalizes the output difference of the E-ch and F-ch from the pickup by changing the amplifier gain inside the LSI. In actual operation, adjustment is performed so that the TE waveform becomes symmetrical on each side of the REFO.
Adjusting procedure
1) After closing the focus loop,
2) Kick the lens in the radial direction to ensure the generation of the TE waveform.
3) The microcomputer reads the offset amount of the TE signal calculated in the LSI at the time through the servo LSI.
4) The microcomputer determines the offset amount is 0, positive, or negative.
- When the offset amount is 0, the adjustment is completed.
- When the offset amount is positive or negative, the amp gains for E-ch and F-ch should be changed, following a certain rule.
Then, steps 2) to 4) are repeated until the offset amount becomes 0 or the repetition reaches the limit number of times.

1.3.3 FE bias auto-adjustment

This adjustment is to maximizes the RFO level by optimizing the focus point during the play mode, utilizing the phase difference between the 3T level waveform of the RF waveform and that of when focus error disturbance is input. This adjustment is performed at the same timing as the auto-gain control, which will be described later, since disturbance is input to the focus loop.
Adjusting procedure
1) The microcomputer issues the command to introduce disturbance to the focus loop (inside the servo LSI).
2) The waver of the 3T component of the RF signal is detected in the LSI.
3) The relation between the 3T component above and the disturbance is processed inside the LSI to detect the volume and direction of the focus offset.
4) The microcomputer issues a command and reads out the detected results from the servo LSI.
5) The microcomputer calculates the necessary correction and substitutes the result to the bias adjustment term inside the servo LSI.
Additionally, in this adjusting, a series of steps are repeated for better adjustment accuracy, the same as in the auto-gain control.

1.3.4 Focus and tracking AGC

This adjustment is to automatically adjust the focus and tracking servo loop gains.

Adjusting procedure

1) Introduce disturbance to the servo loop.

2) The error signals (FE and TE) when disturbance is introduced are extracted through the band pass filter, to obtain the G1 and G2 signals.

3) The microcomputer reads the G1 and G2 signals through the servo LSI.

4) The microcomputer calculates the necessary correction and performs the loop gain adjustment inside the servo LSI.

For increased adjustment accuracy, the same adjustment process is repeated a few times.

1.3.5 RF level auto-adjustment (RFAGC)

This adjustment is to adjust the dispersion of the RF level (RFO), which may be caused by mechanism or disc-related factors, to a steady value for reliable signal transmission. The adjustment is performed by changing the amp gain between RFO and RFAGC.

Adjusting procedure

1) The microcomputer issues a command and reads out the output from the RF level detection circuit inside the servo LSI.

2) From the read values, the microcomputer calculates the amp gain to change the RFAGC level to the target.

3) The microcomputer sends a command to the servo LSI to adjust the amp gain to the level calculated in 2).

This adjustment is performed

1) when only the focus close operation is completed during the setup mode, and

2) immediately before the setup is completed (or when the play mode is about to start).

1.3.6 Adjustment of gains in preamplifier stage

In this adjustment, when reflected beams from the disc surface are extremely weak, such as when the lens is dirty, or a CD-RW is played, gains in the whole RFAMP block (FE, TE, and RF amplifiers) are increased by + 6 dB or + 12 dB, depending on the situation.

Adjusting procedure

When the system determines that the reflected beams from the disc surface are extremely weak during the setup mode, the whole RFAMP gains will be increased by + 6 dB or + 12 dB.

1.3.7 Initial values in adjustment

All automatic adjustments immediately after inserting a disc are performed based on the initial values. Automatic adjustments by source change or ACC ON are basically performed using the previous adjustment values as the initial values.

1.3.8 Coefficient display of adjustment results

For some of the adjustments (FE and RF offset, FZD cancel, F and T gains, and RFAGC), the adjustment results can be displayed and confirmed in the test mode.

The coefficient display in each auto adjustment is as follows:

1) FE and RF offset

Reference value = 32 (coefficient of 32 indicates that no adjustment is required)

The value is displayed in the unit of approximately 32mV.

Ex. When the FE offset coefficient is 35,

35 - 32 = 3 x 32 mV = 96 mV

The correction is about +96 mV, which means the FE offset before adjustment is - 96 mV.

2) F and T gain adjustment

Reference value for focus and tracking = 20

The displayed coefficient / the reference value indicates the adjusted gain.

Ex. When the AGC coefficient is 40,

adjustment of 40 / 20 = 2 times (+ 6 dB) has been performed.

(It means that the original loop gain was half the target, and the whole gain was doubled to obtain the target value.)

3) RF level adjustment (RFAGC)

Reference value = 8

The coefficient of 9 to 15 indicates to increase the RF level

(for more gains).

The coefficient of 7 to 10 indicates to decrease the RF level

(for less gains).

When the coefficient changes by 1, the gain changes by 0.7 to 1 dB.

When the coefficient is 15, the gain is the maximum at TYP + 7.9 dB.

When the coefficient is 0, the gain is the minimum at TYP - 4.6 dB.

1.4 POWER SUPPLY AND LOADING BLOCK

For the power supply for this system, the VD (7.5 ± 0.5 V) and the VDD (5.0 ± 0.25 V), which are supplied from the motherboard, are used. The three power supplies, the VD mentioned above (for the drive system), the V3R3D obtained from the VD via the 3.3 V regulator (for the control system: 3.3 V) and the VDD (for the microcomputer: 5 V), are used in this system.

The microcomputer controls ON/OFF with "CONT", except for Load/Eject of the CD driver, and ON/OFF of 3.3 V with "CD3VON". For ON/OFF of the Loading drive, no particular control terminals are available, but the input signal "LOEJ" assumes an equivalent role. Also, the LCO output switches LOADING MODE and CARRIAGE MODE with "CLCONT".

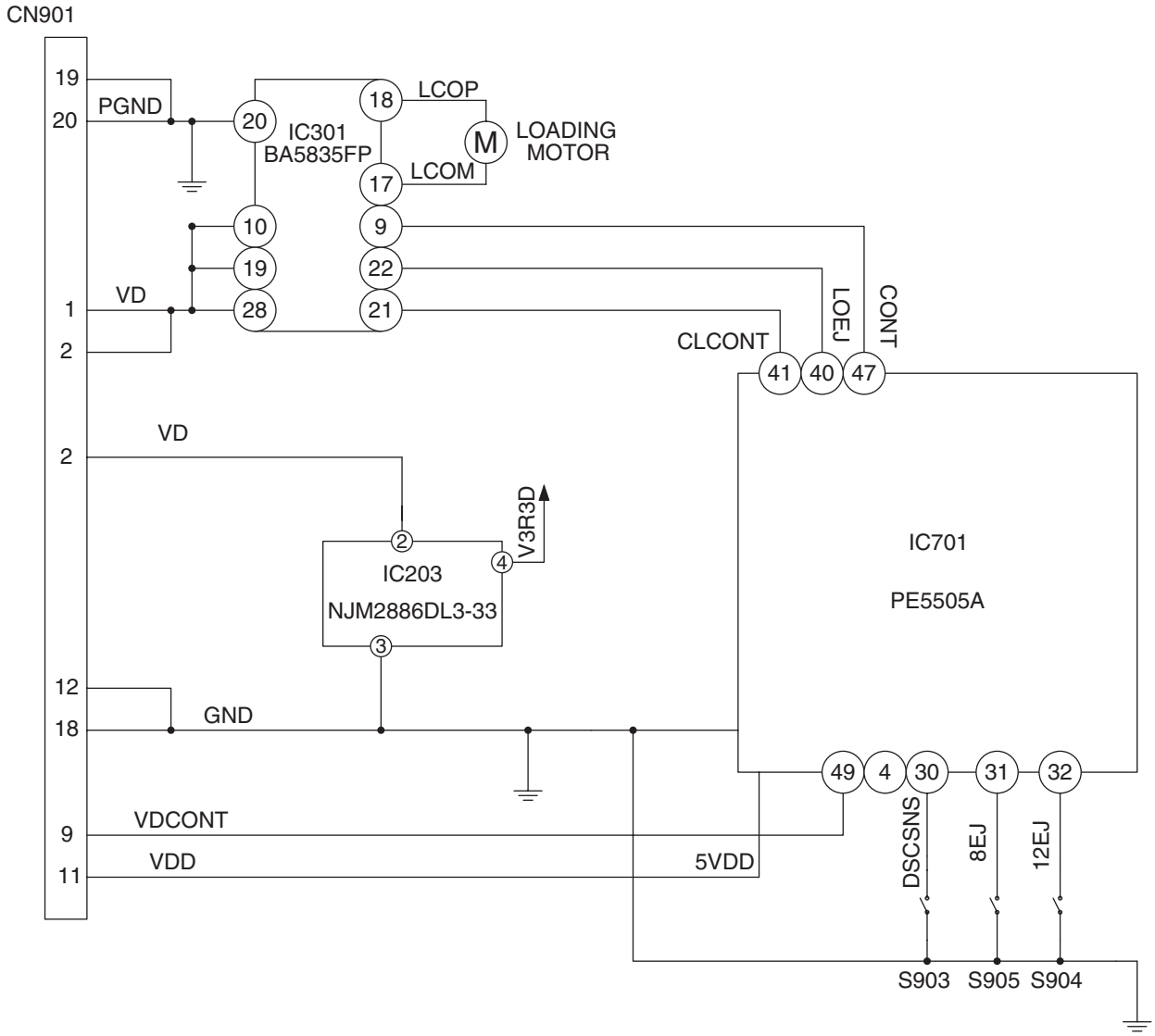


Fig.1.4.1 Power supply/loading system circuit block

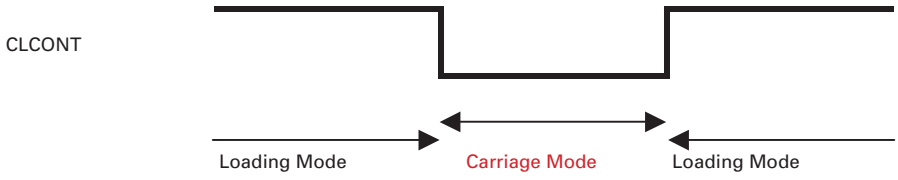


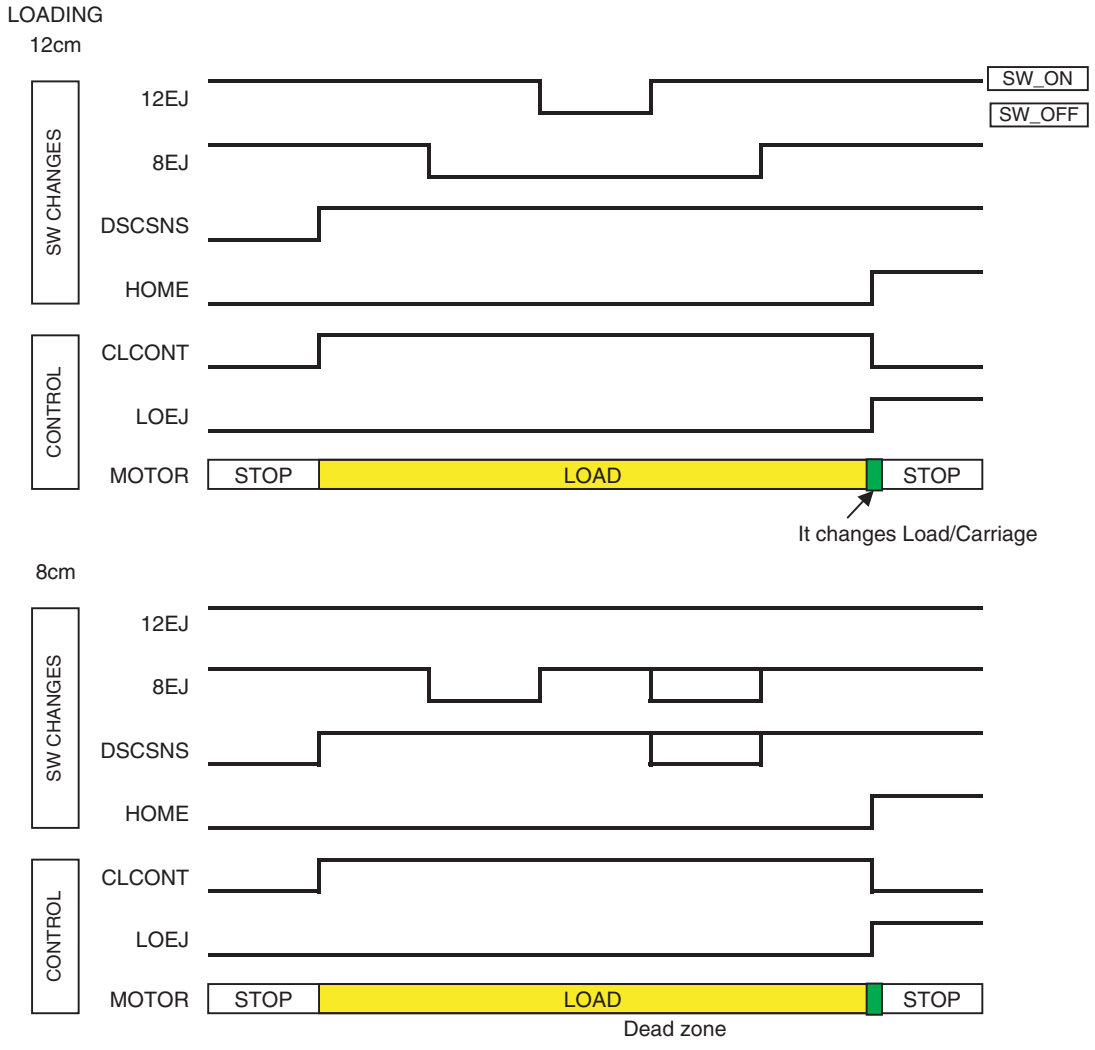
Fig.1.4.2 Loading/carriage mode shift

The load/eject operation is controlled with the status changes of the HOME switch (also used for clamp detection) on the mechanism unit and the three switches on the control unit. The ON/OFF statuses of these switches are respectively detected at the input port of the microcomputer.

Using the detection results in the microcomputer, each status (A to E) is determined. The disc size detection (8 or 12 cm) is also performed through this status change. Each status is shown in Fig.1.4.3 and the status change in Fig.1.4.4.

	Status	A	B	C	D	E
DSCSNS	SW1(S903)	OFF	ON	ON	ON	ON
8SW	SW2(S905)	ON	ON	OFF	OFF	ON
12SW	SW3(S904)	ON	ON	ON	OFF	ON
HOME	SW4(S901)	OFF	OFF	OFF	OFF	ON
	Mechanism state	With no disc				Clamp state

Fig.1.4.3 DSCSNS status



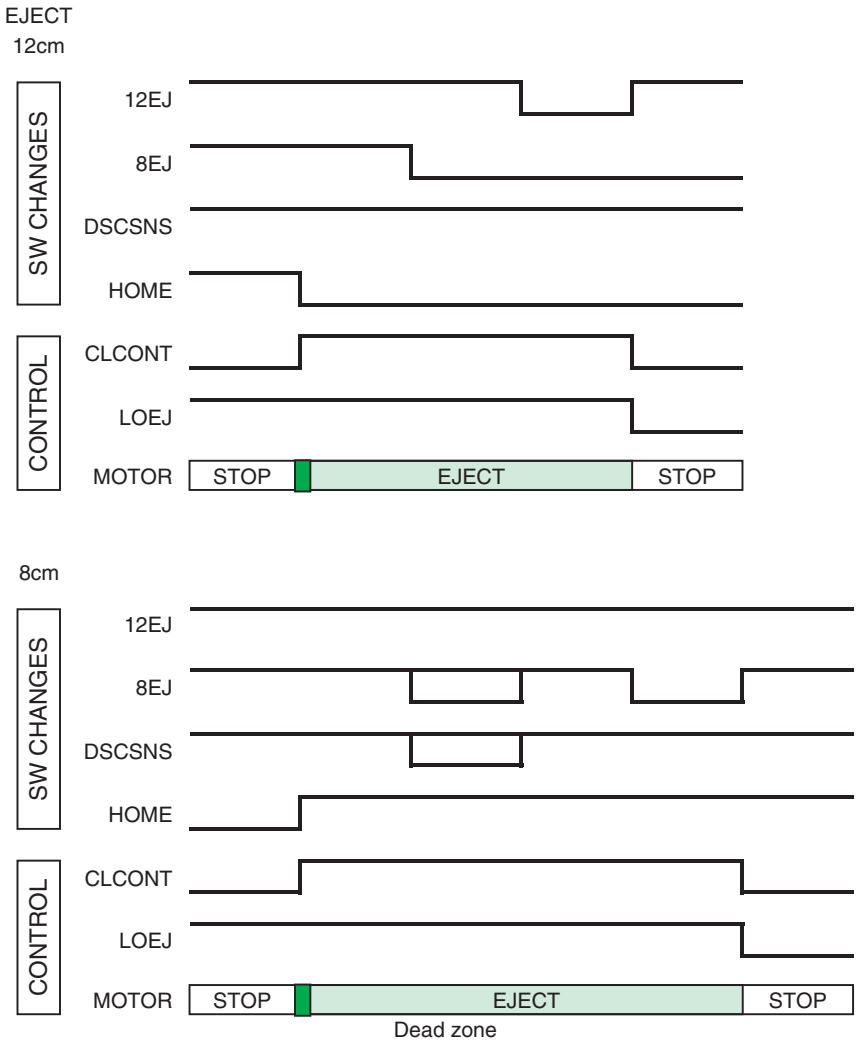
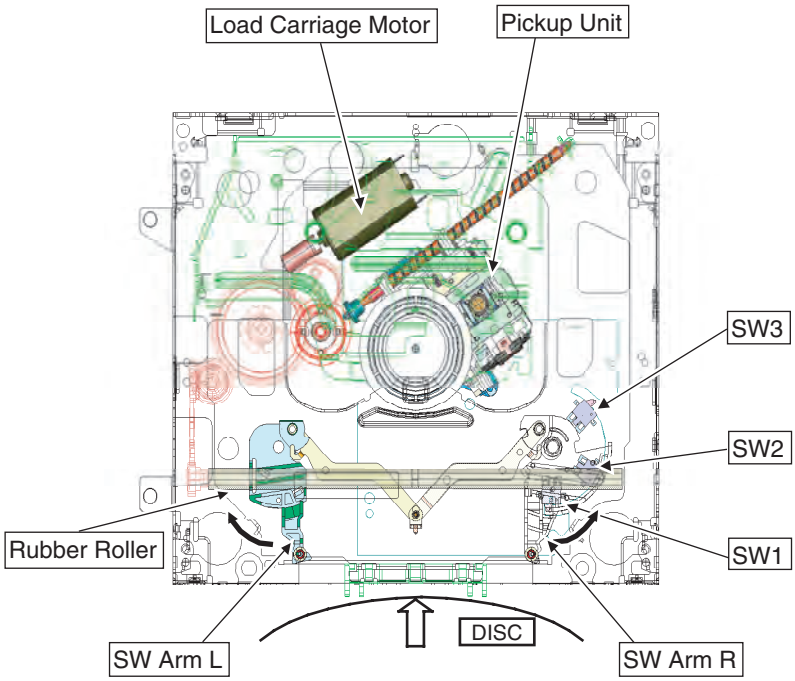


Fig.1.4.4 Status change in LOAD and EJECT modes

2. MECHANISM DESCRIPTIONS

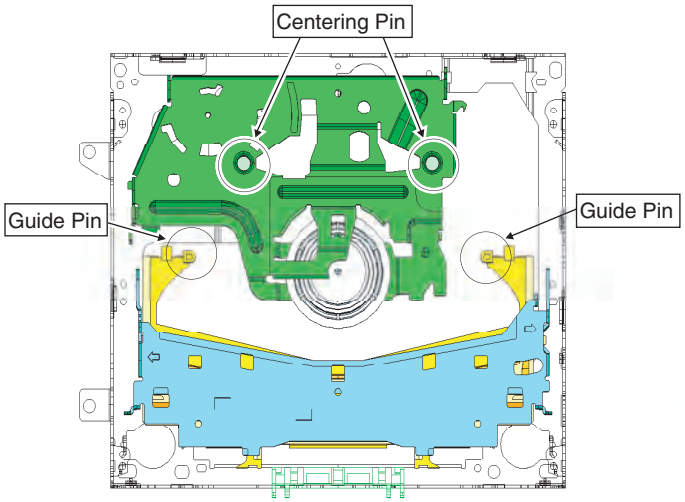
● Loading actions

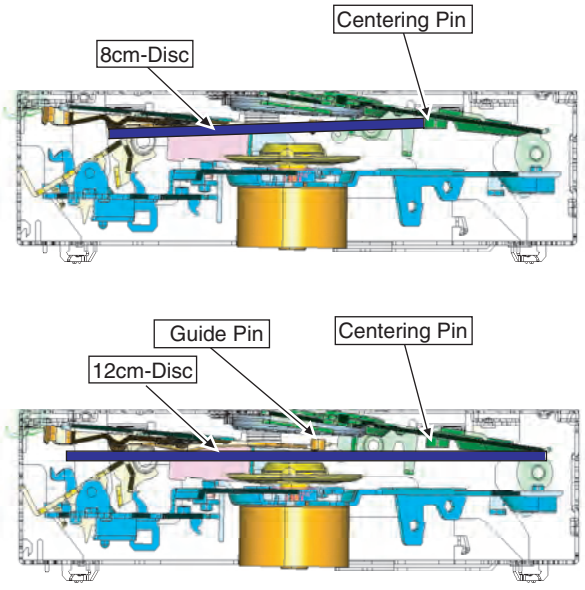
1. When a disc is inserted, SW Arm L and R rotate and SW1 is switched from ON to OFF.
   When SW1 is switched from ON to OFF, the Load Carriage Motor is started and the rubber roller rotates.
2. If the disc is a 12cm-disc, SW3 is turned ON with SW Arm, and the microcomputer determines that the disc is a 12cm-disc.
3. In case of an 8cm-disc, SW3 is not turned ON, a clamp action is triggered, and the microcomputer determines that the disc is an 8cm-disc.
   (The left and right of SW Arm are coupled, and when only one side is pushed, the coupled joint will lock, and the arms will not open more than a certain width (SW3 will not be turned ON).)



● Disc centering mechanism

1. 8cm-disc is centered by the Guide Pins and the Centering Pins.
2. 12cm-disc passes under the Guide Pins and the Centering Pins, and centered in the back position of the mechanism.





● Clamp actions mechanism

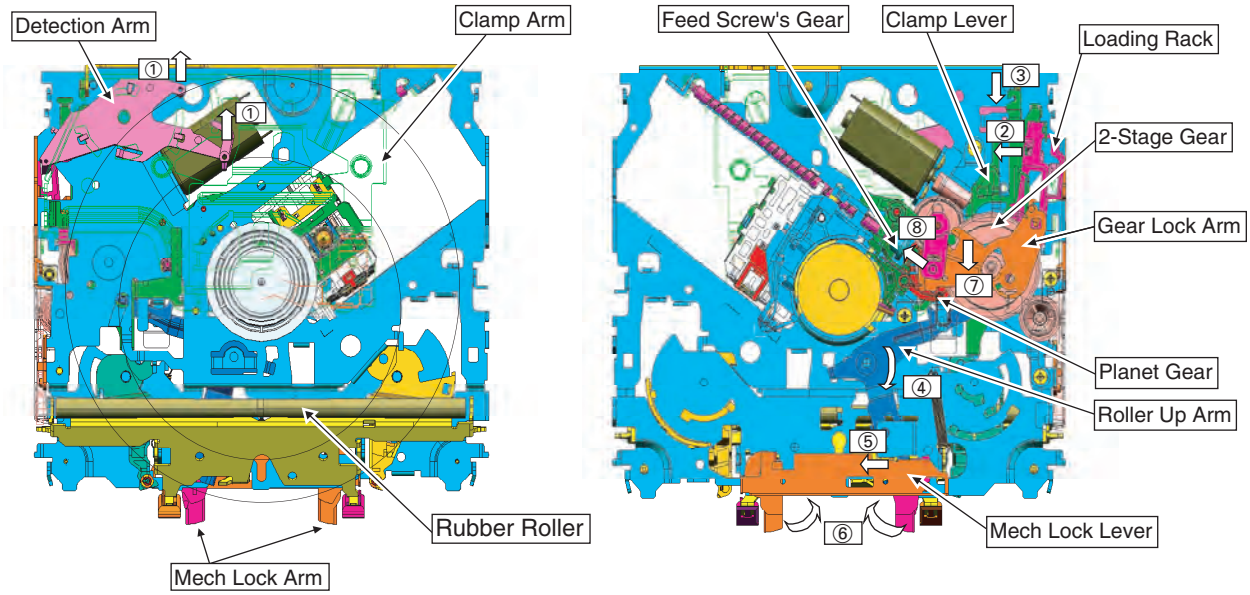
1. With an 8 or 12cm-disc centered on the spindle, the Detection Arm is moved.
2. The movement of the Detection Arm engages the Loading Rack with the 2-Stage Gear.
3. The Clamp Lever slides and lowers the Clamp Arm (the disc is clamped).

At the same time, the Roller Up Arm is rotated, and the Rubber Roller is separated from the disc.

Also the arm slides the Mechanical Lock Lever, turns the Mechanical Lock Arm, and releases the mechanical lock, completing the clamp operation.

4. When the clamp action is completed, the Clamp Lever rotates the Gear Lock Arm.

When the arm is rotated, the Planet Gear is separated from the 2-Stage Gear and engaged with the gear of the pickup feed screw, and the carriage operation will start



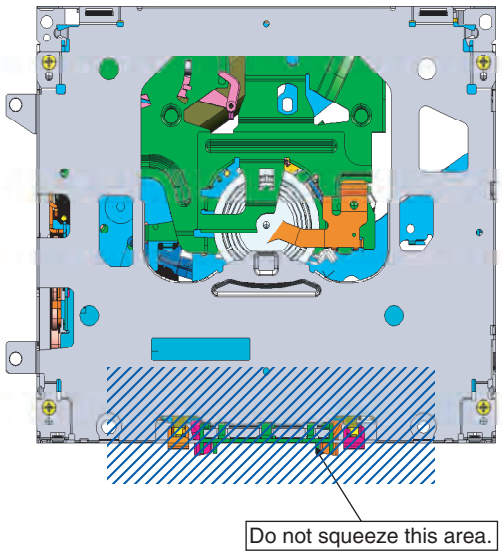
● Eject actions

1. When the Load Carriage Motor is rotated backward, and the pickup is fed to the inner periphery passing the home SW ON point, the eject action will start in the reverse order of the procedure mentioned earlier.
2. For a 12cm-disc, Eject is completed when SW3 is switched OFF, ON, and OFF again.
3. For an 8cm-disc, Eject is completed when SW2 is switched OFF, ON, and OFF again.

3. DISASSEMBLY

● How to hold the Mechanism Unit

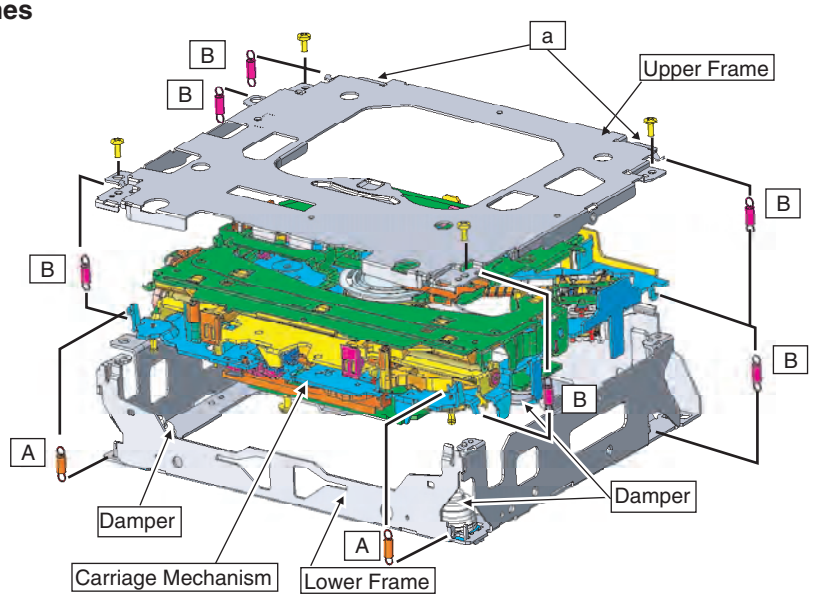
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

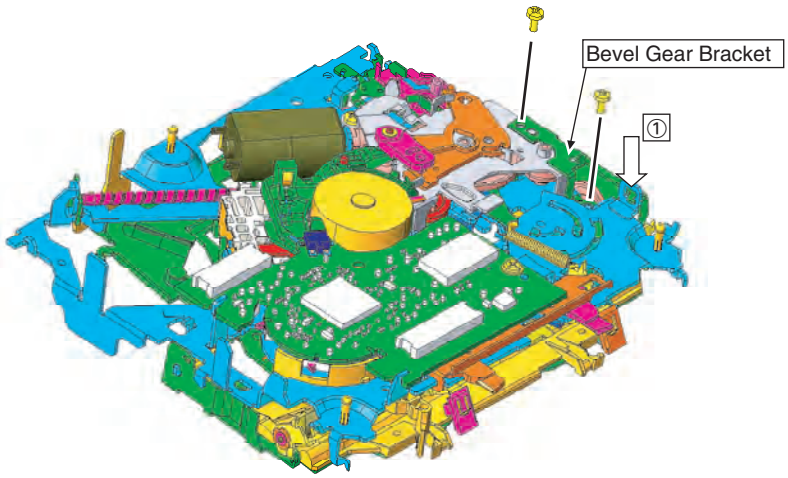
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.

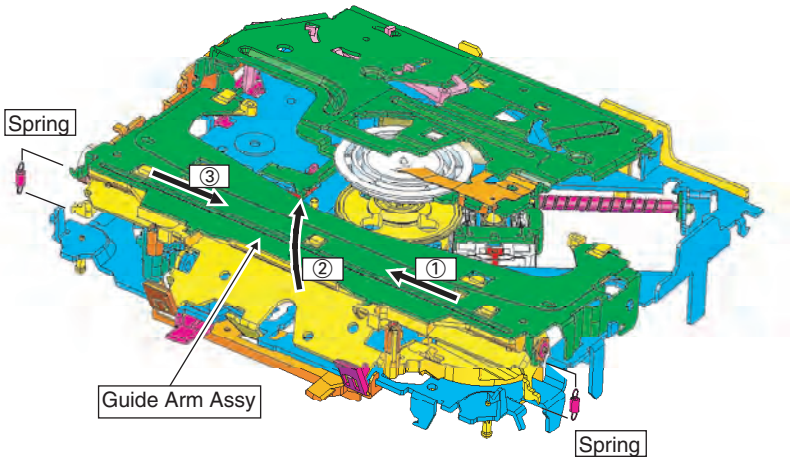


● Removing the Guide Arm Assy

1. Remove the Upper and Lower Frames and set the mechanism to the eject mode.
2. Remove the two Screws and Bevel Gear Bracket. (Note that the gears will come off.)
3. Remove the two Springs from the left and right sides.
4. Slide the Guide Arm Assy to the left, and turn it upward.
5. When it is turned about 45 degrees, slide it to the right and remove.

Caution: When assembling, assemble with the Bevel Gear Bracket moved to the direction of the arrow (①).

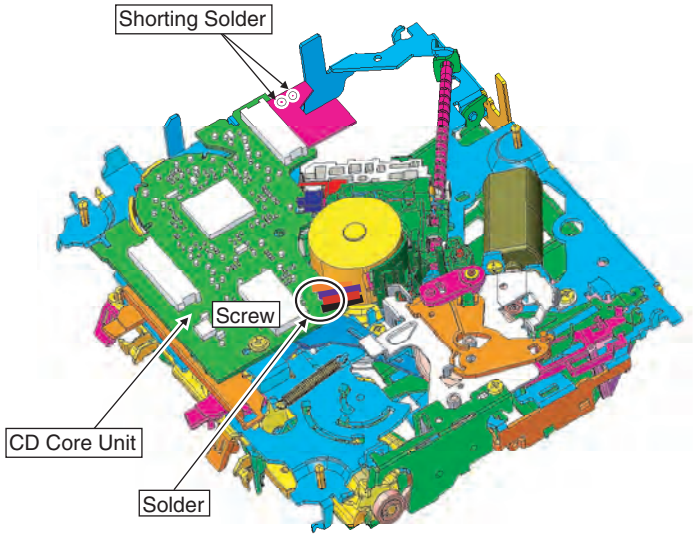




● How to remove the CD Core Unit

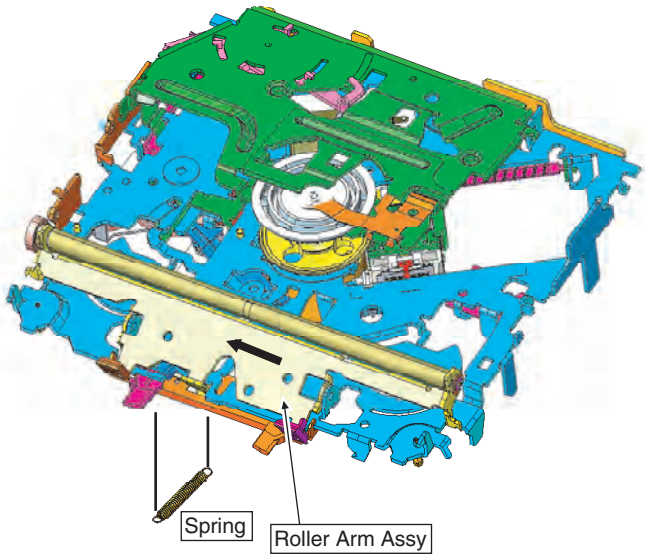
1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

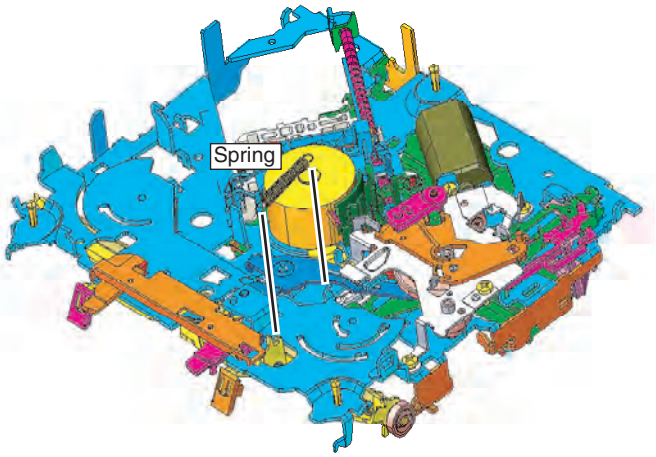
Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.



● How to remove the Roller Arm Assy

1. Remove the Guide Arm Assy.
2. Remove the CD Core Unit. (If the Spring can be removed, the unit need not be removed, depending on the type of CD Core Unit.)
3. Remove the Spring.
4. Slide the Roller Arm Assy to the left.



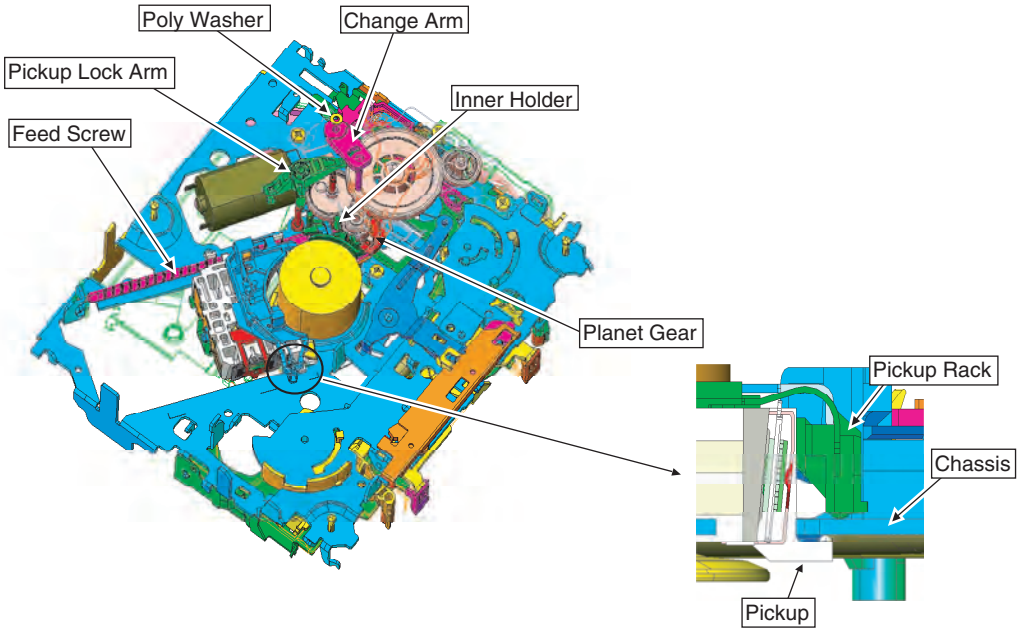


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

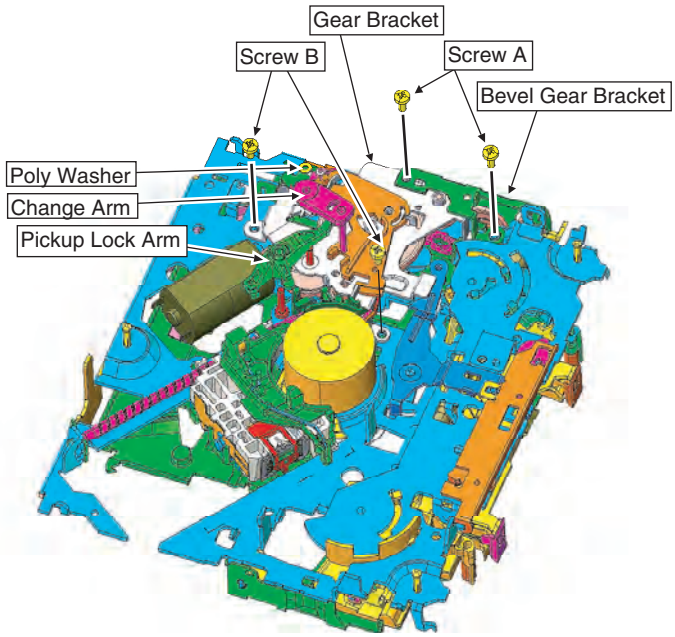
Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.

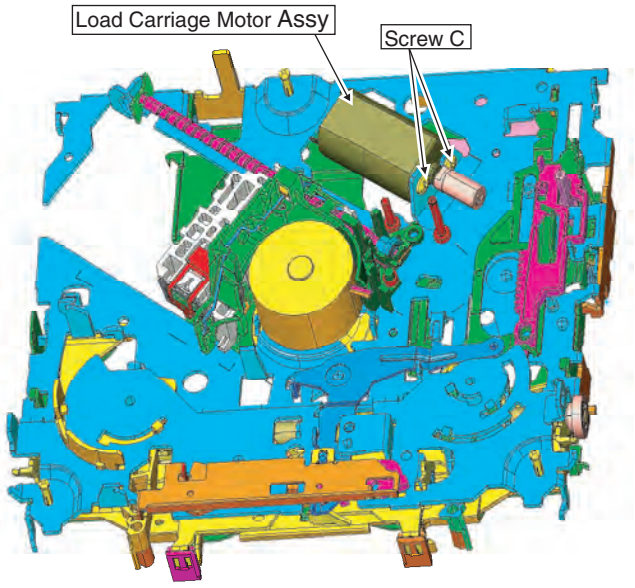


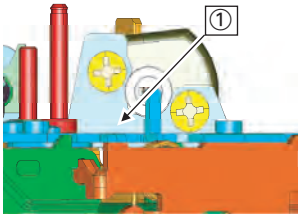
● How to remove the Load Carriage Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Release the leads (orange and purple) of Load Carriage Motor Assy from the CD Core Unit and remove the holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. Remove the two Screws (A) and the Bevel Gear Bracket (Note that the gears will come off).
5. Remove the two Screws (B) and the Gear Bracket (remove the CD Core Unit, if necessary), and remove all the gears.
6. Remove the two Screws (C) and the Load Carriage Motor Assy.

Caution: When assembling the Load Carriage Motor Assy, move it to the direction shown in the illustration (①).
When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



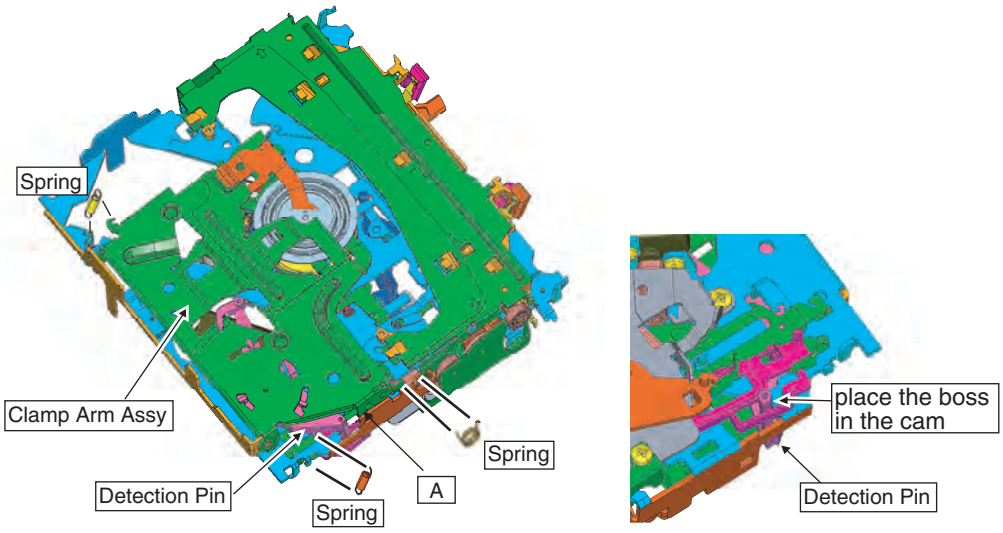




● How to remove the Clamp Arm Assy

1. Make the system in the carriage mechanism mode, and set the mechanism to the eject mode.
2. Remove the three Springs.
3. While pressing the position A, turn the Clamp Arm Assy upward, slide it to the left, and remove.

Caution: When assembling, place the boss of the Detection Pin in the cam unit of the Loading Rack.



● How to remove the Spindle Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Set the mechanism to the eject mode and remove the Clamp Arm Assy.
4. Set the mechanism to the clamped and move the Pickup to circumference.
5. Remove the two Screws, and remove the Spindle Motor Assy.